88:37929
Supported cyclopentadienylmetal carbonyl complexes. II. Polystyrene-supported carbonyl and nitrosyl derivatives of Group VI transition metals.
Gubitosa, Guiseppe; Brintzinger, Hans H. (Fachber. Chem., Univ. Konstanz, Constance, Ger.). J. Organomet. Chem., 140(2), 187-93 (English) 1977. CODEN: JORCAI. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 35

Tricarbonyl hydride derivs. of cyclopentadienylchromium, -molybdenum and -tungsten compds. covalently linked to a macroreticular divinylbenzene-crosslinked polystyrene support are obtained by treatment of polystyrene-attached cyclopentadienyl anions with the resp. metal hexacarbonyl and subsequent acidification. In contrast to the easy loss of H by unsupported cyclopentadienylchromium and -molybdenum tricarbonyl hydrides form dinuclear carbonyl species, no H is released from their polymer-supported counterparts at ~180°, and no dinuclear species are detectable after partial thermal decompn. at higher temps. The identity of the polymer-supported chromium species is confirmed by its conversion into nitrosyl derivs.

Keywords

cyclopentadienylchromium complex polymer supported
chromium cyclopentadienyl carbonyl polymer supported
tungsten cyclopentadienyl carbonyl polymer supported
styrene copolymer cyclopentadienyltungsten complex
molybdenum cyclopentadienyl carbonyl polymer supported
transition metal complex styrene copolymer

Index Entries

Polymer degradation
of styrene-divinylbenzene transition metal supported
Transition metals, compounds
styrene-divinylbenzene copolymer supported, prepn. and reactivity of
10170-68-0, styrene-divinylbenzene copolymer supported
12071-51-1, styrene-divinylbenzene copolymer supported
12128-26-6, styrene-divinylbenzene copolymer supported
12176-06-6, styrene-divinylbenzene copolymer supported
36495-37-1, styrene-divinylbenzene copolymer supported
54235-50-6, styrene-divinylbenzene copolymer supported
prepn. of
4984-82-1
reaction of, with chlorinated styrene-divinylbenzene copolymer
10025-73-7
13007-92-6
reaction of, with cyclopentadienyl-substituted styrene-divinylbenzene copolymer
9003-70-7, cyclopentadienyl substituted
reaction of, with metal carbonyls

94:37012
Study of the state of metal complexes fixed on polymer supports by x-ray photoelectron spectroscopic, infrared spectroscopic, and magnetic susceptibility methods.
Borod'ko, Yu. G.; Ivleva, I. N.; Echmaev, S. B.; Karklin, L. N.; Pomogailo, A. D.; Raevskii, A. V. (USSR). Katalizatory, Soderzhashch. Nanesen. Kompleksy. Materialy Simpoz., Tashkent, 1980, Novosibirsk, (Ch. 1), 123-6 From: Ref. Zh., Khim. 1980, Abstr.

No. 22B1217(Russian) 1980. DOCUMENT TYPE: Journal CA
Section: 67 (Catalysis and Reaction Kinetics) Section
cross-reference(s): 35, 73
Title only translated.

Keywords

metal complex polymer immobilized catalyst
IR metal complex immobilized
magnetic susceptibility metal complex immobilized
XPS metal complex immobilized

Index Entries

Magnetic susceptibility
of transition metal complex catalysts immobilized on polymer supports
Alkenes, reactions
polymn. of, on transition metal complex immobilized catalysts
Polymerization catalysts
transition metal complexes, immobilized on polymer supports
7439-98-7, uses and miscellaneous
7440-02-0, uses and miscellaneous
7440-32-6, uses and miscellaneous
7440-48-4, uses and miscellaneous
catalysts, polymer-supported
9002-88-4
catalysts, transition metal complexes immobilized on
7429-90-5, org. compds.
polymn. of alkenes on immobilized catalysts in presence of

89:12497
Analogies among active sites of coordinatively-unsaturated transition-metal complexes, surfaces, and supported catalysts.
Johnson, K. H.; Balazs, A. C.; Kolari, H. J. (Dep. Mater. Sci. Eng., Massachusetts Inst. Technol., Cambridge, Mass., USA). Surf. Sci., 72(4), 733-8 (English) 1978. CODEN: SUSCAS. ISSN: 0039-6028.
DOCUMENT TYPE: Journal CA Section: 65 (General Physical Chemistry) Section cross-reference(s): 66, 67, 78
The strong similarity between the reactivity of coordinatively-unsatd. transition metal complexes and the catalytic activity of transition metal surfaces, including supported catalyst, is probably not fortuitous and can be understood in terms of the similarity of local electronic structures. The studies include triphenylphosphine and PH3 complexes with Pt and In. MO studies were made. The H dissocn. reaction and C2H2 reaction catalyzed by transition metals wre studied. The electronic structure of an active site on a transition metal is related to the electronic structure of transition metal phosphine complexes. The electronic structure of transition metal atoms (Pt or Re) dispersed on SiO2 was considered as a prototype for a SiO2-supported transition metal catalyst.

Keywords

transition metal complex surface catalyst
catalyst transition metal analog complex
surface transition metal analog complex
electron configuration transition metal complex
reactivity transition metal coupler catalysis
phosphine transition metal complex

Index Entries

Transition metals, uses and miscellaneous
catalysts, supported, analogy with active sites of
coordinatively-unsatd. transition metal complexes
Molecular orbital
Reactivity
of transition metal coordinatively-unsatd. complexes
Surface
on transition metals, analogy with active sites of
coordinatively-unsatd. transition metal complexes
Catalysts and Catalysis
transition metals, supported, analogy with active sites of
coordinatively-unsatd. transition metal complexes and
surfaces
Transition metals, compounds
complexes, active sites of coordinatively-unsatd., analogy with
transition metal surfaces and supported catalysts
603-35-0, transition metals complexes
7439-88-5, phosphine complexes
7440-06-4, phosphine complexes
7803-51-2, transition metals complexes
active sites and reactivity of, analogy with catalyst from transition
metals supported on silicon
7440-06-4, uses and miscellaneous
7440-18-8, uses and miscellaneous
catalysts, supported, analogy with active sites of
coordinatively-unsatd. transition metal complexes
1333-74-0, reactions
dissocn. of, catalysis by transition metals, and analogy to transition
metal coordinatively-unsatd. complexes
74-86-2, reactions
reaction of, catalysis by transition metals, and analogy to
coordinatively-unsatd. transition metal complexes

94:72190
Effect of the nature of support on the composition and activity of
supported metal-complex catalysts.
Rakitskaya, T. L. (USSR). Katalizatory, Soderzh. Nanesen.
Kompleksy. Materialy Simpoz., Tashkent, 1980, Novosibirsk, (Ch 2),
163-6 From: Ref. Zh., Khim. 1980, Abstr. No. 24B1278(Russian)
1980. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis and
Reaction Kinetics)
Title only translated.

Keywords

support effect metal complex catalyst

Index Entries

Catalysts and Catalysis
metal complex-support, activity and compn. of
Adsorbed substances
water, on metal complex catalysts, activity in relation to
7732-18-5, vapor
adsorbed, on metal complex-support catalysts, activity in relation
to

94:72189
Catalytic activity of supported metal-complex compounds in redox
processes.
Rakitskaya, T. L.; Paina, V. Ya.; Kosheleva, N. N.; Vorob'eva, N. A.;

Poklad, N. S. (USSR). Katalizatory, Soderzh. Nanesen. Kompleksy. Materialy Simpoz., Tashkent, 1980, Novosibirsk, (Ch 2), 159-62 From: Ref. Zh., Khim. 1980, Abstr. No. 24B1274(Russian) 1980.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis and Reaction Kinetics)
Title only translated.

Keywords

redox catalyst supported metal complex

Index Entries

Redox reaction catalysts
metal complex-support, characterization of
Thermodynamics
of metal complexes, redox reaction catalyst activity in relation to
Kinetics of redox reaction
of metal coordination compds., in soln. and bound to inorg. supports
Coordination compounds
redox reaction catalysts, in soln. and bound to inorg. supports

93:7364
Oxidation of phosphine and carbon monoxide in the presence of supported complex-metal catalysts.
Rakitskaya, T. L.; Ennan, A. A.; Vorob'eva, N. A.; Paina, V. Ya. (Odess. Univ., Odessa, USSR). Tezisy Dokl. - Ukr. Resp. Konf. Fiz. Khim., 12th, 153-4. Edited by: Yatsimirskii, K. B. Izd. Naukova Dumka: Kiev, USSR. (Russian) 1977. CODEN: 42WKA4. DOCUMENT TYPE: Conference CA Section: 22 (Physical Organic Chemistry)
The rates of the title oxidns. were complex functions of the catalyst compn.

Keywords

oxidn carbon monoxide phosphine catalytic

Index Entries

Kinetics of oxidation
of carbon monoxide and phosphine in presence of supported metal-complex catalysts
Oxidation catalysts
supported metal complexes, for carbon monoxide and phosphine, kinetics with
630-08-0, reactions
7803-51-2
oxidn. of, with supported metal-complex catalysts, kinetics of

91:63256
Engineering implications following the attachment of catalytically active transition metal complexes into solid supports "the leaky catalyst".
Altmann, Howard Wayne (Princeton Univ., Princeton, NJ, USA). 404 pp. Avail. Univ. Microfilms Int., Order No. 7910100 From: Diss. Abstr. Int. B 1979, 39(11), 5463 (English) 1979. DOCUMENT TYPE: Dissertation CA Section: 67 (Catalysis and Reaction Kinetics) Section cross-reference(s): 48
Abstract Unavailable

Keywords

catalyst leaky supported metal complex
transition metal complex catalyst
heterogeneous catalyst attached complex

Index Entries

Transition metals, uses and miscellaneous
catalysts, leaking of solid-supported coordination complex
Transition metals, compounds
coordination complexes, bound to solid supports, leaking of
Coordination compounds
solid-linked transition metal, catalysts, leaking of
Catalysts and Catalysis
transition metal complex-solid support, reversibility of binding in

94:72184
Use of spin labels to study topochemical transformations in fixed complex-metal catalysts.
Bravaya, N. M.; Pomogailo, A. D.; D'yachkovskii, F. S. (USSR).
Katalizatory, Soderzhashch. Nanesen. Kompleksy, Materialy Simpoz., Tashkent, 1980, Novosibirsk, (Ch 1), 13-16 From: Ref. Zh., Khim. 1980, Abstr. No. 23B1110(Russian) 1980. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis and Reaction Kinetics)
Title only translated.

Keywords

topochem transformation metal complex catalyst
spin label catalyst topochem transition

Index Entries

Catalysts and Catalysis
metal complex-support, spin label study of topochem. transitions in
Reaction
topochem., in metal complex catalysts, spin label studies of
7550-45-0, properties
spin-label studies of transition in supported

94:66163
Nature of the promoting action of hydrogen in ethylene polymerization on gel-immobilized metal-complex catalysts.
Baulin, A. A.; Kopylov, V. M.; Ivanchev, S. S.; Smetanyuk, V. I.; Kabanov, V. A. (Nauchno-Proizvod. Ob'edin. "Plastpolimer", Leningrad, USSR). Dokl. Akad. Nauk SSSR, 254(2), 385-9 [Phys. Chem.] (Russian) 1980. CODEN: DANKAS. ISSN: 0002-3264.
DOCUMENT TYPE: Journal CA Section: 35 (Synthetic High Polymers)
Lowering of mol. wt. of polyethylene (I) in the title polymn. by addn. of H was accompanied, at certain range of H concns., by an increase, rather than a decrease, in the polymn. rate. The rate acceleration reflected an increase in the rate of diffusion of I from the gel-supported catalyst to the ambient solvent; the diffusion constituted a rate-detg. step of the polymn. At higher H concns., regeneration of the catalyst by monomer insertion in the metal-H bond was rate detg.; this insertion rate was slower than the rate of monomer insertion in the metal-copolymer bond.

Keywords

hydrogen promoter ethylene polymn mechanism

kinetics ethylene polymn hydrogen promoter
gel supported complex catalyst polymn
polymn catalyst gel supported ethylene

Index Entries

Kinetics of polymerization
of ethylene on gel-supported complex catalysts, promoting action
of hydrogen in relation to
Polymerization
of ethylene on gel-supported complex catalysts, promoting action
of hydrogen in, mechanism of
Polymerization catalysts
organoaluminum-titanium tetrachloride complexes, on
Grignard-treated graft copolymer supports, polymn. of
ethylene in presence of, promoting action of hydrogen in,
mechanism of
7550-45-0, uses and miscellaneous
catalysts, contg. organoaluminum compds., on Grignard-treated
graft copolymer support, polymn. of ethylene in presence of,
promoting action of hydrogen in, mechanism of
96-10-6, uses and miscellaneous
97-93-8, uses and miscellaneous
1191-15-7
catalysts, contg. titanium tetrachloride, on Grignard-treated graft
copolymer support, polymn. of ethylene in presence of,
promoting action of hydrogen in, mechanism of
27029-51-2, reaction products with Grignard reagents
73681-98-8, reaction products with Grignard reagents
73681-99-9, reaction products with Grignard reagents
73682-00-5, reaction products with Grignard reagents
graft, catalyst support for organoaluminum-titanium tetrachloride
system, polymn. of ethylene in presence of, promoting
action of hydrogen on, mechanism of
1333-74-0, uses and miscellaneous
mol. wt. regulator and polymn. promoter, polymn. of ethylene in
presence of, mechanism of
74-85-1, reactions
polymn. of, in presence of gel-supported complex catalyst,
promoting action of hydrogen in, mechanism of

91:211456
Some trends in the preparation and characterization of silica-bound
transition metal complexes.
Yermakov, Yu. I. (Inst. Catal., Novosibrisk 630090, USSR). Colloq. Int.
C. N. R. S., Volume Date 1977, 281(Relat. Catal. Homogene Catal.
Heterogene), 233-65 (English) 1978. CODEN: COINAV. ISSN:
0366-7634. DOCUMENT TYPE: Journal; General Review CA Section:
29 (Organometallic and Organometalloidal Compounds) Section
cross-reference(s): 35
A review with 35 refs.

Keywords

review metal complex silica

Index Entries

Hydrogenation catalysts
silica-supported palladium complexes, for cyclopentadiene
Telomerization catalysts
silica-supported transition metals, for butadiene
Polymerization catalysts

silica-supported transition metals, for ethylene
Catalysts and Catalysis
silica-supported transition metals, prepn. of
Transition metals, compounds
silica-supported, catalysts, prepn. of

87:135865
Supported cyclopentadienyl metal carbonyl complexes. 1.
Mononuclear iron(II) and cobalt(I) derivatives stabilized by
attachment to a polystyrene support.
Gubitosa, Giuseppe; Boldt, Manfred; Brintzinger, Hans H. (Fachber.
Chem., Univ. Konstanz, Constance, Ger.). J. Am. Chem. Soc., 99(15),
5174-5 (English) 1977. CODEN: JACSAT. DOCUMENT TYPE:
Journal CA Section: 29 (Organometallic and Organometalloidal
Compounds)
Treatment of a cyclopentadienylmethyl-substituted polystyrene (CMP)
with Fe2(CO)9 in THF yielded a polymer-supported cyclopentadienyl
iron(II) dicarbonyl hydride. In contrast to the instability of homogeneous
solns. of C5H5Fe(CO)2H against loss of H, the polymer-supported
compd. is quite stable at .ltoreq.100.degree. in the absence of air. No
dinuclear products with bridging CO groups, corresponding to
(C5H5)2Fe2(CO)4, were generated by thermolysis at 180.degree..
Similarly, cyclopentadienyl cobalt(I)dicarbonyl, covalently linked to a
polystyrene support, is obtained by treatment of a CMP with Co2(CO)8.
In contrast to corresponding reactions in homogeneous solns., no
CO-bridged di- or polynuclear intermediates are obsd. during or after
photochem. CO-elimination reactions. Evidently, coordinatively unsatd.
cyclopentadienyl metal centers remain isolated from each other by the
polymer support.

Keywords

iron cyclopentadienyl polystyrene supported
cyclopentadienyl metal polystyrene supported
cobalt cyclopentadienyl polystyrene supported
polystyrene supported metal complex

Index Entries

10210-68-1
15321-51-4
reaction of, with cyclopentadienylmethyl-substituted
polystyrene-divinylbenzene copolymer
7439-89-6, complexes
7440-48-4, complexes
stabilization of, by attachment to polystyrene support
9003-70-7, cyclopentadienylmethyl-substituted
support, for iron and cobalt complexes

86:23384
Oxygen reduction on ultra thin carbon supported polymeric
phthalocyanine electrodes in 6N potassium hydroxide.
Appleby, A. J.; Savy, M. (Lab. Electrolyse, CNRS, Bellevue, Fr.).
Electrochim. Acta, 21(8), 567-74 (English) 1976. CODEN: ELCAAV.
DOCUMENT TYPE: Journal CA Section: 72 (Electrochemistry)
O redn. on C-supported iron polyphthalocyanine [36344-64-6] and
manganese polyphthalocyanine [41079-07-6] was studied in 6N KOH
using the ultra-thin electrode technique of W. M. Vogel and J. T.
Lundquist (1970). The activity of samples prepd. in situ in the gas
phase is 2-3 times greater than that for phthalocyanines pptd. from
soln. The main factor governing activity is the spatial distribution of the

catalyst. The c.d. of untreated supports is higher than on the corresponding supported catalyst in the diffusion region. Introduction of Cu to the Fe cyanine to give mixed polyphthalocyanines gives a reduced performance but .ltoreq.50% Sn has no effect. The effect of the catalyst support was also examd.

Keywords

oxygen redn electrochem polyphthalocyanine
cathode metal polyphthalocyanine carbon

Index Entries

Carbon black, uses and miscellaneous
cathodes, contg. polyphthalocyanine metal complex, for oxygen redn.
Reduction, electrochemical
of oxygen, on carbon-supported polyphthalocyanine cathodes
Cathodes
phthalocyanine metal complexes, on ultra-thin carbon, for oxygen redn.
7440-44-0, uses and miscellaneous
7782-42-5, uses and miscellaneous
cathodes, contg. polyphathalocyanine metal complexes, for oxygen redn.
574-93-6
26893-93-6
36344-64-6
41079-07-6
61251-22-7
cathodes, on carbon, for oxygen redn.
712-74-3
reaction of, with ferrocene and metal dipivaloylmethanes, on carbon
102-54-5
14852-90-5
26178-34-7
reaction of, with pyromellitonitrile, on carbon
7782-44-7, reactions
redn. of, electrochem., on phthalocyanine metal complex
carbon-supported cathodes

88:95362
Complexing in an adsorption layer as a method for preparing supported metal-complex catalysts based on nickel carbonyl Ni(CO)4 and iron carbonyl Fe(CO)5.
Vasserberg, V. E.; Kalechits, I. V. (USSR). Katalizatory, Soderzhashchie Nanesen. Kompleksy., 15-18 From: Ref. Zh., Khim. 1977, Abstr. No. 23B1198(Russian) 1977. DOCUMENT TYPE:
Journal CA Section: 67 (Catalysis and Reaction Kinetics) Section cross-reference(s): 66
Title only translated.

Keywords

carbonyl adsorption complexing catalyst prepn
nickel carbonyl catalyst prepn
iron carbonyl catalyst prepn
complex supported catalyst prepn

Index Entries

Adsorption
Coordination

of transition metal carbonyls, in supported catalyst prepn.
Catalysts and Catalysis
transition metal carbonyl-support, prepn. of
13463-39-3
13463-40-6
adsorption and complexing of, in supported catalyst prepn.

93:167515
The preparation, characterization, and use of supported potassium-group VIII metal complexes as catalysts for carbon monoxide hydrogenation.
McVicker, G. B.; Vannice, M. A. (Corp. Pioneering Res. Lab., Exxon Res. and Eng. Co., Linden, NJ 07036, USA). J. Catal., 63(1), 25-34 (English) 1980. CODEN: JCTLA5. ISSN: 0021-9517. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds)
A novel approach for prepg. well-dispersed, highly promoted potassium-Group VIII metal catalysts for Fischer-Tropsch has been developed. Catalysts were prepd. by impregnating Al2O3 or SiO2 with well-characterized potassium-Group VIII metal carbonyl complexes and then thermally decompg. the supported complexes under H. Since potassium and the Group VIII metals are assocd. in the precursor complexes, the deposition and subsequent decompn. of such complexes maximize potassium-Group VIII metal contacting on the support surface. Several complex derived catalysts were more active and exhibited higher selectivities for C2-C5 olefins than conventionally prepd. potassium-Group VIII metal catalysts of the same metals stoichiometry. The use of preformed carbonyl complexes as supported catalyst precursors can increase any promotional effect potassium can have upon supported Group VIII metals.

Keywords

hydrogenation catalyst potassium iron
carbon monoxide hydrogenation catalyst
methane Fischer Tropsch

Index Entries

Hydrogenation catalysts
potassium-Group VIII metal complexes, for carbon monoxide
7439-88-5, uses and miscellaneous
7439-89-6, uses and miscellaneous
7440-18-8, uses and miscellaneous
catalyst, for hydrogenation of carbon monoxide, potassium promoter for
630-08-0, reactions
hydrogenation of, potassium-Group VII metal complexes as catalysts for
16182-63-1
60039-75-0
73623-74-2
73678-71-4
prepn. and thermal decompn. of, on catalyst support
74-82-8, preparation
74-84-0, preparation
74-85-1, preparation
74-98-6, preparation
106-97-8, preparation
109-66-0, preparation
115-07-1, preparation
25167-67-3
prepn. of, potassium-Group VIII metal complex catalyst for
7440-09-7, uses and miscellaneous

promoter, for Group VII metal complex catalyzed hydrogenation of carbon monoxide
10421-48-4
redn. of, for hydrogenation catalyst
12154-95-9
17685-52-8
redn. of, with potassium
15243-33-1
18827-81-1
redn. of, with potassium amalgam

90:157723
Catalysts Containing Supported Complexes. [Proceedings of the All-Union Conference "Synthesis and Catalytic Properties of Transition Metal Complexes Fixed on Support Surfaces"] (Katalizatory, Soderzhashchie Nanesennye Kompleksy).
Ermakov, Yu. I.; Editor (USSR). (Akad. Nauk SSSR, Sib. Otd., Inst. Katal.: Novosibirsk, USSR), 237 pp. rub 1.20. (Unavailable) 1977.
DOCUMENT TYPE: Book CA Section: 67 (Catalysis and Reaction Kinetics) Section cross-reference(s): 78
Abstract Unavailable

Keywords

book catalyst supported complex
transition metal complex catalyst book

Index Entries

Coordination compounds
catalysts, fixed on support surfaces
Transition metals, compounds
complexes, fixed on support surfaces, prepn. and catalytic properties of
Catalysts and Catalysis
supported complexes

87:157567
Supported transition metal complexes as catalysts.
Hartley, F. R.; Vezey, P. N. (Dep. Chem. Metall., R. Mil. Coll. Sci., Shrivenham/Swindon/Wilts., Engl.). Adv. Organomet. Chem., 15, 189-234 (English) 1977. CODEN: AOMCAU. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis and Reaction Kinetics)
A review with 116 refs.

Keywords

review transition metal complex catalyst

Index Entries

Transition metals, compounds
complexes, catalysts, supported
Catalysts and Catalysis
transition metal complexes, supported

86:34682
Fixed inorganic catalysts.

Ogasawara, Sadao (Fac. Eng., Yokohama Natl. Univ., Yokohama, Japan). Shokubai, 18(5), 124-34 (Japanese) 1976. CODEN: SHKUAJ. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis and Reaction Kinetics) Section cross-reference(s): 29
A review, with 63 refs., on prepn., structure, and catalytic activity of fixed-on-SiO2 inorg. catalysts each contg. a characteristic moiety of one of CrO3, AlCl3, Al(CH3)3, .pi.-allyl complexes of Zr, Mo, and Ni, and several other metal-unsatd. hydrocarbon complexes.

Keywords

silica support inorg catalyst review
review metal complex catalyst supported

Index Entries

Coordination compounds
catalysts, silica-supported
Transition metals, compounds
complexes, catalysts, silica-supported
Catalysts and Catalysis
inorg. compd.-silica, prepn., structure, and activity of

94:175610
g-Radiation produced supported metal complex catalysts. II. Cobalt carbonyl hydroformylation catalysts supported on polypropylene containing pyridine side chains.
Hartley, Frank R.; McCaffrey, David J. A.; Murray, Stephen G.; Nicholson, Philip N. (Dep. Chem. Metall., R. Mil. Coll. Sci., Wiltshire SN6 8LA, Engl.). J. Organomet. Chem., 206(3), 347-59 (English) 1981. CODEN: JORCAI. ISSN: 0022-328X. DOCUMENT TYPE: Journal CA Section: 35 (Synthetic High Polymers) Section cross-reference(s): 29, 67, 74
The optimum conditions for prepg. catalyst supports by radiochem. grafting of 4-vinylpyridine on polypropylene are total dose 2 Mrad, dose rate 300 Krad/h, and monomer-polymer mol ratio 0.4:1. Addn. of 0.1% p-tert-butylpyrocatechol [98-29-3] nearly doubles the grafting yield. The hydroformylation of 1-hexene [592-41-6] in the presence of CO2(CO)8 supported on the graft polymer [25749-02-4] shows a 50% increase in specificity, as detd. by the n-branched heptanal ratio, over a corresponding homogeneous catalyst, with similar activities..

Keywords

vinylpyridine grafting polypropylene
catalyst hydroformylation graft polymer
hexene hydroformylation catalyst support
polymn radiochem vinylpyridine polypropylene

Index Entries

Hydroformylation catalysts
cobalt carbonyl, vinylpyridine-grafted polypropylene support for
Gamma ray, chemical and physical effects
polymn. by, of vinylpyridine on polypropylene, optimization of
Polymerization
graft, of vinylpyridine on polypropylene, by gamma rays, optimization of
Polymerization
radiochem., of vinylpyridine on polypropylene, optimization of
10210-68-1
catalysts, for hydroformylatio, vinylpyridine graft polymer supports for

25749-02-4
graft, supports for hydroformylation catalysts, optimization of prepn. of
592-41-6, reactions
hydroformylation of, catalyst supports for
67-66-3, uses and miscellaneous
polymn. of vinylpyridine on polypropylene in presence of
98-29-3
promoters, for radiochem. polymn. of vinylpyridine on polypropylene

94:139117
The state of metal ions in supported catalysts with respect to their catalytic activity in metathesis.
Kuznetsov, B. N.; Startsev, A. N.; Ermakov, Yu. I. (Inst. Catal., Novosibirsk 630090, USSR). J. Mol. Catal., 8(1-3), 135-45 (English) 1980. CODEN: JMCADS. ISSN: 0304-5102. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds) Section cross-reference(s): 67
The relation between the compn. and catalytic activity of surface metal complexes prepd. by anchoring of allyl and ethoxy compds. Mo, W, and Re to silica was studied. The precursors of metathesis active centers in these catalysts are coordinatively unsatd. metal ions with oxidn. no. + 4. The activity of surface species in olefin metathesis also depends to a great extent on the ligand environment of the metal ion.

Keywords

alkene metathesis molybdenum tungsten rhenium

Index Entries

Double decomposition catalysts
allyl and methoxy complexes of molybdenum, tungsten, and rhenium, for alkenes
7631-86-9, uses and miscellaneous
catalysts support, for allyl and ethoxy complexes of molybdenum, tungsten, and rhenium, for alkene metathesis
12336-10-6
56376-84-2
64340-72-3
65756-25-4
catalysts with silica, for alkene metathesis
115-07-1, reactions
115-11-7, reactions
metathesis of, metal complex catalysts on silica for

94:91042
Complexes of platinum metals on polymer supports.
Radova, Z.; Kalalova, E.; Ullmanova, G. (USSR). Katalizatory, Soderzhashch. Nanesen. Kompleksy. Materialy Simpoz., Tashkent, 1980, Novosibirsk, (Ch 1), 155-8 From: Ref. Zh., Khim. 1980, Abstr. No. 23B1121(Russian) 1980. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis and Reaction Kinetics)
Title only translated.

Keywords

platinum metal complex catalyst support
polymer support platinum group catalyst

Index Entries

Platinum-group metals
catalysts, on polymer support
Catalysts and Catalysis
platinum-group metal complexes, on polymer supports
7440-05-3, uses and miscellaneous
7440-16-6, uses and miscellaneous
catalysts, on polymer support
107-15-3, palladium complexes
142-73-4, rhodium complexes
catalysts, on polymer supports
31743-77-8
catalysts, platinum-group metal complexes supported by

94:45802
g-Aluminum oxide supported metal complex nickel(II) heptadecanoate-triethylaluminum (Ni(C17COO)2-Al(C2H5)3) catalyst in the hydrogenation of sunflower oil.
Petrova, T. A.; Noskova, N. F. (Inst. Org. Katal-Elektrokhim., Alma-Ata, USSR). Izv. Akad. Nauk Kaz. SSR, Ser. Khim., (5), 27-31 (Russian) 1980. CODEN: IKAKAK. ISSN: 0002-3205. DOCUMENT TYPE: Journal CA Section: 17 (Foods)
The activity and selectivity of a nickel stearate [2223-95-2]-Et3Al [97-93-8] catalyst on a g-Al2O3 support during sunflower oil hydrogenation varied with the molar proportion of Ni stearate in the catalyst and increased with increasing temp. from 20 to 60°. At 20° max. activity occurred with Ni stearate at 27.5 mol%, and max. selectivity occurred at 3.9 mol%.

Keywords

oil hydrogenation catalyst activity
nickel stearate hydrogenation catalyst
triethylaluminum hydrogenation catalyst

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Sunflower oil
hydrogenation of, with nickel stearate-triethylaluminum catalyst, activity and selectivity in relation to
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97-93-8, reactions
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2223-95-2
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1344-28-1, biological studies
hydrogenation catalyst support, in sunflower oil hydrogenation, activity and selectivity in relation to

92:129565
The use of g-radiation for the preparation of supported metal complex catalysts. I. The grafting of 4-vinylpyridine to polypropylene.
Hartley, F. R.; McCaffrey, D. J. A. (Dep. Chem. Metall., R. Mil. Coll. Sci., Shrivenham/Swindon/Wilts., Engl.). Fundam. Res. Homogeneous Catal., 3, 707-17 (English) 1979. CODEN: FRHCDG. DOCUMENT TYPE: Journal CA Section: 35 (Synthetic High Polymers) Section

cross-reference(s): 67
The graft polymn. of 4-vinylpyridine (I) on polypropylene (II) in benzene is initiated by g-rays in the absence of O. Polymn. of a 33% soln. of I (contg. 1% p-tert-butylcatechol stabilizer) in benzene with a ratio of 40 mols I/mol II gives the optimum grafting efficiency. A dose rate of 300 krad/h and a total dose of 2 Mrad give satisfactory results. The graft copolymer [25749-02-4] is prepd. for use as a support for transition metal catalysts. The g ray-initiated graft polymn. of H2C:CMeCH2PPh2 in benzene-CHCl3 gives low grafting yields.

Keywords

vinylpyridine polypropylene grafting gamma ray
methallyldiphenylphosphine polypropylene grafting
grafting radiochem polypropylene
polymn graft polypropylene gamma ray
phosphine unsatd grafting polypropylene radiation

Index Entries

Gamma ray, chemical and physical effects
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Polymerization
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25749-02-4
73106-86-2
graft, prepn. of, with initiation by g rays

90:28337
Low-temperature oxidation of carbon monoxide in the presence of supported metal-complex catalysts.
Rakitskaya, T. L.; Ennan, A. A.; Paina, V. Ya. (Odes. Gos. Univ., Odessa, USSR). Izv. Vyssh. Uchebn. Zaved., Khim. Khim. Tekhnol., 21(7), 1007-10 (Russian) 1978. CODEN: IVUKAR. ISSN: 0579-2991.
DOCUMENT TYPE: Journal CA Section: 59 (Air Pollution and Industrial Hygiene) Section cross-reference(s): 67
Kinetic and potentiometric anal. showed that, in the presence of a Pd-Cu metal complex catalyst, the oxidn. of CO occurs at normal pressure and temp. The oxidn. rate is correlated linearly and pos. with Pd concn., but is not correlated linearly with Cu concn.

Keywords

carbon monoxide oxidn kinetics catalyst
copper catalyst carbon monoxide oxidn
palladium catalyst carbon monoxide oxidn

Index Entries

Oxidation catalysts
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7440-05-3, complexes
7440-50-8, complexes
catalysts, for carbon monoxide oxidn. in protection of environment
630-08-0, reactions
oxidn. of, in protection of environment, copper and palladium

complexes as catalysts for

88:73987
Potentiometric and kinetic study of supported metal-complex catalysts in low-temperature gas-phase processes.
Dorfman, Ya. A. (USSR). Katalizatory, Soderzhashchie Nanesen. Kompleksy., 199-201 From: Ref. Zh., Khim. 1977, Abstr. No. 22B1282(Russian) 1977. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds) Section cross-reference(s): 67
Title only translated.

Keywords

catalyst oxidn hydration hyrogenation
hydration catalyst acetylene
hydrogenation catalyst acetylene
oxidn catalyst phosphine sulfan

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7446-09-5, reactions
7803-51-2
53096-30-3
oxidn. of, transition metal aquo halogen complex catalyst for

87:207140
Catalysts containing transition metal fixed complexes on the surface of supports.
Ermakov, Yu. I. (USSR). Teor. Probl. Kataliza, 147-80 From: Ref. Zh., Khim. 1977, Abstr. No. 18B1421(Russian) 1977. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis and Reaction Kinetics)
Title only translated.

Keywords

catalyst transition metal complex support

Index Entries

Coordination compounds
catalysts, solid-supported
Transition metals, compounds
complexes, catalysts, on support surfaces
Catalysts and Catalysis
supports, transition metal complexes fixed on surface of

105:97544

Regioselectivity of hydrosilylation in the presence of ion-exchange resin-supported Group VIII metal complexes.
Nikitin, A. V.; Reikhsfel'd, V. O. (Leningr. Tekhnol. Inst., Leningrad, USSR). Zh. Obshch. Khim., 55(9), 2079-84 (Russian) 1985. CODEN: ZOKHA4. ISSN: 0044-460X. DOCUMENT TYPE: Journal CA
Section: 29 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 22
The regioselectivity of hydrosilylation of styrene with MeCl2SiH in the presence of AB-17-8- and KU-2-8-supported Ni, Co, Rh, Ir, Os, Pd, and Pt complexes was studied. Thus, KU-2-Ni(II) gave 94% a-isomer whereas AB-17-[Ir(III)Cl6] gave 100% b-isomer.

Keywords

regioselectivity hydrosilylation styrene
metal complex catalyst hydrosilylation styrene
ion exchange resin supported catalyst hydrosilylation

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15277-86-8
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14337-08-7, ion-exchange resin-supported
14349-66-7, ion-exchange resin-supported
14349-67-8, ion-exchange resin-supported
14493-01-7, ion-exchange resin-supported
14648-50-1, ion-exchange resin-supported
15379-09-6, ion-exchange resin-supported
16871-52-6, ion-exchange resin-supported
16871-54-8, ion-exchange resin-supported
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73596-67-5, ion-exchange resin-supported
97349-03-6, ion-exchange resin-supported
97373-76-7, ion-exchange resin-supported
103705-77-7, ion-exchange resin-supported
103705-78-8, ion-exchange resin-supported
103992-44-5, ion-exchange resin-supported
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12642-25-0, anion-exchange resin-supported Group VIII metal complexes
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100-42-5, reactions
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772-65-6
7282-39-5
prepn. of, from hydrosilylation of styrene with dichloromethylsilane in presence of ion-exchange resin-supported Group VIII metal complexes, regioselectivity in relation to

96:218007
Fixation of metal carbonyls on polyisocyanides.
Menzel, Hartmut; Fehlhammer, Wolf Peter; Beck, Wolfgang (Inst. Anorg. Chem., Univ. Muenchen, Munich D-8000/2, Fed. Rep. Ger.). Z. Naturforsch., B: Anorg. Chem., Org. Chem., 37B(2), 201-8 (German) 1982. CODEN: ZNBAD2. ISSN: 0340-5087. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds)
Polyisocyanides with the groups -CH2NYC and -C(O)O(CH2)2NYC attached to polystyrene were prepd. and reacted with various metal carbonyl compds. resulting in the fixation on the polymeric supports of -M(CO)5, -M(CO)4 (M = Cr, Mo, W), -Mo(Cl)(h-C5H5)(CO)2 (C5H5 = cyclopentadienyl), -Mn2(CO)n, -Mn(CO)nX (n = 3, 4; X = Cl, Br), -Fe(CO)4, -Fe3(CO)11, -FeI2(CO)2, -FeX(h-C5H5)(CO) (X = Cl, Br, I), -Ru(CO)4, -Ru3(CO)9, -Os3H2(CO)10, and -RhCl(CO)2. The cyano complexes [Fe(CN)2(h-C5H5)CO]- and [Mo(CN)2(h-C5H5)(CO)2]- were immobilized by alkylation with chloromethylated polystyrene.

Keywords

polymer supported metal complex
polyisocyanide supported metal complex
chromium polyisocyanide supported
molybdenum polyisocyanide supported
tungsten polyisocyanide supported
manganese polyisocyanide supported
iron polyisocyanide supported
ruthenium polyisocyanide supported
osmium polyisocyanide supported
rhodium polyisocyanide supported

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10210-68-1
12078-20-5
12078-28-3
12107-04-9
12128-23-3
13463-39-3
13463-40-6
14100-30-2

14516-54-2
14523-22-9
14780-95-1
14780-96-2
14780-97-3
14878-30-9
15038-41-2
15243-33-1
17685-52-8
36477-75-5
41766-80-7
53248-43-4
fixation of, on polyisocyanides

97:6482
Polymer-supported complexes. Part 2. Polystyrene-anchored pentane-2,4-dionato complexes of transition metals. Synthesis, reactions, and catalytic properties.
Bhaduri, Sumit; Khwaja, Hanif; Khanwalker, Vinod (Alchemie Res. Cent. Priv. Ltd., Thane 400 601, India). J. Chem. Soc., Dalton Trans., (2), 445-50 (English) 1982. CODEN: JCDTBI. ISSN: 0300-9246.
DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 22, 35
Sol. and divinylbenzene cross-linked (8%) polystyrene functionalized with pentane-2,4-dionate groups reacted with MLn (M = Fe, n = 3; M = Co, Cu, n = 2; M = Zr, n = 4), [VOL2], [Rh(CO)2L], TiCl4, [Ni(en)2]Cl2, and FeCl3 [en = (CH2NH2)2, L = CH(COMe)2] to give polymer-anchored metal complexes. IR study of the thermal decarbonylation of polymer-anchored [Rh(CO)2L] suggests formation of a partially decarbonylated pentanedionate-bridged intermediate followed by Rh-pentanedionate bond cleavage. Polymer-supported FeL3 and Rh(CO)2L act as catalysts for hydrogenation of olefins; formation of metal crystallites on the polymer surface is responsible for the obsd. catalytic activities.

Keywords

transition metal pentanedionato polystyrene support
decarbonylation polystyrene support carbonylpentanedionatorhodium mechanism
rhodium dicarbonyl pentanedionate decarbonylation mechanism
hydrogenation catalyst pentanedionato transition metal

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Alkenes, reactions
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46369-53-3, polystyrene bound
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9003-53-6, pentane-2,4-dionate functionalized, transition metal complexes
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107-15-3, reaction product of, with pentanedionate-functionalized polystyrene
14874-82-9, complex with pentanedionate-functionalized polystyrene
prepn., thermal decompn., and catalytic activity of

103:87556
Synthesis of polymer-supported transition metal catalysts via phosphido linkages: heterogeneous catalysts for the hydrogenation of aromatic compounds under mild conditions.
Jones, Richard A.; Seeberger, Mark H. (Dep. Chem., Univ. Texas, Austin, TX 78712, USA). J. Chem. Soc., Chem. Commun., (6), 373-4 (English) 1985. CODEN: JCCCAT. ISSN: 0022-4936. DOCUMENT TYPE: Journal CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 23, 35, 67
Transition metal species such as Rh(COD) and Pd(COD)Cl (COD = 1,5-cyclooctadiene) anchored to polymers through phosphido groups were prepd. E.g., treatment of Merrifield's Peptide Resin with Me3CPHLi in THF-hexane at -100° then room temp. for 24 h followed by [Rh(COD)Cl]2 in THF at room temp. for 48 h gave the Rh(COD) complex. These materials are catalysts for the hydrogenation of arenes and alkenes under mild conditions. The hydrogenation of C6H6 with this Rh catalyst is stereospecific; with D2 100% cis-cyclohexane-d6 was obtained.

Keywords

arene hydrogenation transition metal catalyst
polymer support transition metal catalyst
alkene hydrogenation transition metal catalyst

Index Entries

Aromatic hydrocarbons, reactions
hydrogenation of, polymer-supported transition metal complex-catalyzed
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108-88-3, reactions
592-41-6, reactions
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7440-16-6, poly(styrene-divinylbenzene)-bound tert-butylphosphine
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7440-48-4, poly(styrene-divinylbenzene)-bound tert-butylphosphine
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12092-47-6
12112-67-3
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15976-97-3
19232-05-4
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67877-34-3, polymer-supported
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96:114906
The preparation and characterization of transition metal complexes
supported on zirconium phosphate and their oxygen adducts.
Quayle, Laura Ruth (Texas A and M Univ., College Station, TX, USA).
159 pp. Avail. Univ. Microfilms Int., Order No. 8128918 From: Diss.
Abstr. Int. B 1982, 42(7), 2831 (English) 1981. DOCUMENT TYPE:
Dissertation CA Section: 78 (Inorganic Chemicals and Reactions)
Abstract Unavailable

Keywords

transition metal complex phosphate supported
zirconium phosphate supported metal complex
oxygen transition metal complex

Index Entries

Transition metals, compounds
complexes, supported on zirconium phosphate and their oxygen

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7782-44-7, transition metal complexes
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13765-95-2
transition metal complexes supported on

102:204423
g-Radiation grafting: a novel approach for the preparation of robust and highly selective supported metal complex catalysts.
Hartley, Frank R. (R. Mil. Coll. Sci., Shrivenham/Wiltshire SN6 8LA, UK). Br. Polym. J., 16(4), 199-204 (English) 1984. CODEN: BPOJAB. ISSN: 0007-1641. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
g-Radiation grafting was used to functionalize polypropylene leading to the incorporation of several functional groups at a single site on the polymer with the formation of a 3-dimensional catalytically active site. This approach is illustrated by ref. to Co and Rh(I) olefin hydroformylation catalysts; in both cases, the supported catalysts (e.g., propylene-4-vinylpyridine graft copolymer or diphenyl-4-styrylphosphine-propylene copolymer) show greater selectivity to the formation of straight-chain as opposed to branched aldehydes than the corresponding homogeneous analog.

Keywords

hydroformylation polypropylene supported metal phosphine
cobalt phosphine polypropylene supported hydroformylation
rhodium phosphine polypropylene supported hydroformylation
hexene hydroformylation heterogeneous catalysis
grafting polypropylene hydroformylation catalyst

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123-05-7
925-54-2
formation of, in hexene hydroformylation, over polypropylene-supported cobalt or rhodium phosphine complexes
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64816-42-8, rhodium complexes
76585-25-6, rhodium complexes
96570-72-8, rhodium complexes
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592-41-6, reactions
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102:149497
Isolation and characterization of reactive intermediates and active catalysts in homogeneous catalysis.

Gassman, Paul G.; Macomber, David W.; Willging, Stephen M. (Dep. Chem., Univ. Minnesota, Minneapolis, MN 55455, USA). J. Am. Chem. Soc., 107(8), 2380-8 (English) 1985. CODEN: JACSAT. ISSN: 0002-7863. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 67

A new method has been developed for the isolation and characterization of highly reactive intermediates and of active catalysts in homogeneous catalysis by transition-metal complexes. Using the principles of steric exclusion type chromatog., a method has been devised for the isolation of highly reactive intermediates on the surface of porous polymer films. Anal. of these surface-isolated intermediates by XPS (ESCA) provided detailed information about the transition-metal complexes that resided on the surface of the polymer film. The utility of this process was demonstrated by a reanal. of the decarbonylation of acid chlorides using chlorotris(triphenylphosphine)rhodium(I) (Wilkinson's catalyst). Through the utilization of the concepts and techniques described above, the active catalytic intermediate involved in the metathesis-promoted polymn. of cyclopentene to polypentenomer by oxotetrachlorotungsten-ethylaluminum dichloride was isolated on the surface of porous polystyrene film. This technique was viable because the active catalyst had to be attached to the end of the growing polymer chain. Anal. of the surface-isolated catalyst by XPS showed a ratio of W:O:Al:Cl of 1:1:1:4-5. The tungsten showed a binding energy of 36.0 and 38.2 eV [W(4f7/2) and W(4f5/2), resp]. This intermediate species was very labile. On treatment with trimethylphosphine, this catalyst was converted into a new tungsten complex (noncatalytic) that showed binding energies of 34.0 and 36.2 eV for W(4f7/2) and W(45/2), resp. These values can be compared to values of 34.1 and 36.3 eV for Schrock's stable tungsten-alkylidene complex, W(O)(CHCMe3)Cl2(PEt3)2.

Keywords

transition metal complex catalysis
homogeneous catalysis reactive intermediate
polymer supported active catalyst
rhodium catalyst decarbonylation acid chloride
polymn cyclopentene catalyst intermediate

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58832-09-0
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94942-78-6
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102:12807
Ammonia synthesis catalysts produced from complex cyanides of iron, ruthenium, osmium, and rhenium transition metals. I. Supported

complex cyanide catalysts.
Filippin, V. A.; Krylova, A. V.; Zhilova, A. N. (Mosk. Khim.-Tekhnol. Inst., Moscow, USSR). Deposited Doc., VINITI 5531-83, 13 pp. Avail. VINITI (Russian) 1983. DOCUMENT TYPE: Report CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
The activities of catalysts formed by reducing complex cyanides in the presence of Y, Yb, or Er chlorides or nitrates. Catalysts prepd. from (NH4)4[M(CN)6] (M = Ru, Os, Fe) have little activity compared to catalysts prepd. from K4M(CN)6 (K acts as a promoter). Interaction of rare earth (Ln) and transition metal compds. gives a KLnM(CN)6 active phase. Activities are sometimes 5-6 times greater than those of std. Fe catalysts.

Keywords

ammonia catalyst redn complex cyanide
ferrocyanide prepn ammonia catalyst
ruthenium ammonia catalyst complex cyanide
osmium ammonia catalyst complex cyanide
iron ammonia catalyst complex cyanide
lanthanide ammonia catalyst complex cyanide
yttrium ammonia catalyst complex cyanide
ytterbium ammonia catalyst complex cyanide
erbium ammonia catalyst complex cyanide

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7440-09-7, uses and miscellaneous
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98:34196
g-Radiation-produced supported metal complex catalysts. IV. Rhodium(I) hydroformylation catalysts supported on phosphinated polypropylene.
Hartley, F. R.; Murray, S. G.; Nicholson, P. N. (Dep. Chem. Metall., R. Milit. Coll. Sci., Shrivenham/Wilts SN6 8LA, UK). J. Mol. Catal., 16(3), 363-83 (English) 1982. CODEN: JMCADS. ISSN: 0304-5102.
DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds)

Section cross-reference(s): 67
Supported Rh(I) hydroformylation catalysts have been prepd. by reacting poly(propylene-g-p-styryldiphenylphosphine) with [Rh(acac)(CO)2]. In the hydroformylation of hex-1-ene the supported catalyst gives a normal:branched (n/b) selectivity of ~16 at 65°, which is at least 3.5 times greater than that of the corresponding homogeneous catalyst [Rh({p-CH2:CHC6H4}PPh2)(acac)(CO)] together with added phosphine. On increasing the temp. above 65° the yield of aldehyde decreases; in addn. the n/b selectivity drops to ~6 at 85°. The effect of increasing the P:Rh ratio is much greater in the case of the polymer-supported catalyst than in the homogeneous system: a n/b selectivity of 16 can be achieved using the modes P:Rh ratio of 8. Thus the activity of the supported catalyst is not heavily degraded by the presence of a vast excess of free phosphine.

Keywords

polymer rhodium hydroformylation catalyst
phosphinated polypropylene support rhodium catalyst
hexene hydroformylation catalyst
heptanal

Index Entries

Hydroformylation
of hexene over rhodium complex supported on phosphinated polypropylene
Aldehydes, preparation
prepn. of, by hydroformylation of alkene over rhodium catalysts supported on phosphinated polypropylene
Polymer-supported reagents
rhodium complex on phosphinated polypropylene, catalysts, for hydroformylation of hexene
Hydroformylation catalysts
rhodium supported on phosphinated polypropylene, for hexene
25470-96-6
83018-40-0
IR spectrum of
83018-40-0, polypropylene-bound
hydroformylation catalysts from
592-41-6, reactions
hydroformylation of, over rhodium complexes on phosphinated polypropylene
111-71-7
925-54-2
prepn. of, hydroformylation of hexene over rhodium catalysts supported on phosphinated polypropylene
14874-82-9
reaction of, with phosphinated polypropylene, hydroformylation catalysts from

104:193969
Polynuclear metal complexes as model mixed oxide catalysts.
Babb, Kenneth H.; White, Mark G. (Sch. Chem. Eng., Georgia Inst. Technol., Atlanta, GA 30332-0100, USA). J. Catal., 98(2), 343-54 (English) 1986. CODEN: JCTLA5. ISSN: 0021-9517. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 66
Selective chemisorptions of CO and NH3 were used to study the sorption properties of polynuclear metal complexes of Cu2+ and M3+ (M = Al, Cr, and Fe) supported on SiO2 (Cab-O-Sil). On those samples heated to <180° no IR spectra of CO could be detected, indicating that all the Cu ions were Cu2+ and that the Fe3+ and Cr3+ ions were

coordinately satd. IR spectra of chemisorbed NH3 showed relaxations at frequencies characteristic of Lewis-bound (3350-3280 cm-1) and protonic-bound (3210-3175 cm-1) NH3 for all clusters having open Cu2+ sites. The Lewis-bound NH3 IR peaks disappeared when the Cu2+ sites were sterically blocked, whereas the relaxations of NH3 bound to other sites did not. The 54° isotherm of the strongly bound NH3 showed an av. site d. that increased as Al > Cr > Fe. The activation energy for desorbing NH3 from the 32 wt.% samples changed with M3+: Al < Cr < Fe.

Keywords

copper metal silica catalyst chemisorption
chemisorption carbon monoxide ammonia polynuclear complex
aluminum copper polynuclear complex chemisorption
chromium copper polynuclear complex chemisorption
iron copper polynuclear complex chemisorption
IR ammonia chemisorbed copper metal silica
desorption kinetics ammonia copper metal silica

Index Entries

Chemisorbed substances
ammonia, on copper polynuclear metal complexes supported on silica, IR spectroscopic study of
Desorption
of ammonia, from copper polynuclear metal complexes supported on silica, kinetics of
Chemisorption
of carbon monoxide and ammonia, by copper polynuclear metal complexes supported on silica
Catalysts and Catalysis
polynuclear metal complex of copper, supported on silica, chemisorption of carbon monoxide and ammonia by
7429-90-5, polynuclear metal complexes
7439-89-6, polynuclear metal complexes
7440-47-3, polynuclear metal complexes
7440-50-8, polynuclear metal complexes
catalysts, supported on silica, chemisorption of carbon monoxide and ammonia by
630-08-0, reactions
7664-41-7, reactions
chemisorption of, by copper polynuclear metal complexes supported on silica

99:21758
Cumene hydroperoxide decomposition in the presence of metal complex catalysts supported on amorphous silicon dioxide.
Damyanov, D.; Tanielyan, S. (Inst. Org. Chem., Sofia, Bulg.). React. Kinet. Catal. Lett., 21(3), 191-4 (English) 1982. CODEN: RKCLAU. ISSN: 0304-4122. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
By the method of mol. deposition, ions of CrO22+, VO3+, and MoO22+ were supported on a matrix of amorphous SiO2. Different types of org. ligands were support subsequently on the surface compds. so formed. The catalytic activity of the samples was studied in the decompn. of cumene hydroperoxide. The kinetics show that the reaction has an ionic mechanism.

Keywords

cumene hydroperoxide decompn catalyst
mechanism cumene hydroperoxide decompn

silica chromium oxide decompn catalyst
vanadium oxide decompn catalyst
molybdenum oxide decompn catalyst
org ligand decompn catalyst

Index Entries

Oxidation catalysts
amorphous silica supported, chromium, vanadium, or molybdenum oxides, for cumene hydroperoxide, ligand effects in relation to
Ligands
effect of, on decompn. of cumene hydroperoxide over amorphous silica supported chrome, vanadium, or molybdenum oxides
Oxidation
of cumene hydroperoxide over amorphous silica supported metal oxides, mechanism of
7727-18-6
13637-68-8
14977-61-8
catalysts from amorphous silica and, for decompn. of cumene hydroperoxide, ligand effects in relation to mechanism of
80-15-9
decompn. of, over silica supported chromium, vanadium, or molybdenum oxides, ligand effects in relation to mechanism of
50-71-5
57-11-4, uses and miscellaneous
95-45-4
123-54-6, uses and miscellaneous
132-53-6
140-89-6
148-24-3, uses and miscellaneous
521-74-4
538-62-5
effect of, on cumene hydroperoxide decompn. over amorphous silica supported chromium, vanadium, or molybdenum oxides, mechanism in relation to

104:116901
Supported Metal Complexes. A New Generation of Catalysts.
Hartley, F. R. (Neth.). (D Reidel Publishing Co.: Dordrecht, Neth.), 318 pp. (English) 1985. DOCUMENT TYPE: Book CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Abstract Unavailable

Keywords

book catalyst supported metal complex

Index Entries

Transition metals, compounds
complexes, catalysts formed by supported
Coordination compounds
metal, catalysts formed by supported
Catalysts and Catalysis
supported metal complexes

104:109860

Oligosilastyrene-supported bis(arene)metal and -dimetal complexes from metal vapor synthesis.
Ozin, Geoffrey A.; Andrews, Mark P.; West, Robert (Lash Miller Chem. Lab., Univ. Toronto, Toronto, ON M5S 1A1, Can.). Inorg. Chem., 25(4), 580-2 (English) 1986. CODEN: INOCAJ. ISSN: 0020-1669.
DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 35
Transition metal atoms Ti, V, Cr and Mo react with oligomers of phenyl-contg. Me polysilanes at room temp. to form oligosilane-supported bis(arene)metal and -dimetal complexes.

Keywords

titanium oligosilastyrene complex
vanadium oligosilastyrene complex
chromium oligosilastyrene complex
molybdenum oligosilastyrene complex
oligosilastyrene transition metal complex
silastyrene oligomer transition metal complex
polysilane transition metal complex

Index Entries

Transition metals, compounds
complexes with oligosilastyrenes
Polymers, compounds
oligomers, transition metal complexes
7439-98-7, oligosilastyrene complexes
7440-32-6, oligosilastyrene complexes
7440-47-3, oligosilastyrene complexes
7440-62-2, oligosilastyrene complexes
70158-17-7, transition metal complexes
prepn. of

98:82741
Synthesis and activity of silicone supported transition metal complex catalysts. V. Synthesis of poly(oxa-7-diphenylphosphino-6-hydroxyheptylsiloxane)-palladium complex and its catalytic activity for hydrogenation of olefins.
Chen, Yuanyin; Liu, Jiwan; Lin, Yigeng; Xiao, Chaobo; Mai, Caisong (Wuhan Univ., Wuhan, Peop. Rep. China). Wuhan Daxue Xuebao, Ziran Kexueban, (3), 29-36 (Chinese) 1982. CODEN: WTHPDI.
DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions) Section cross-reference(s): 23, 24, 25, 67
The title complex (A) prepd. from Na2PdCl4.4H2O and poly-4-oxa-7-diphenylphosphino-6-hydroxyheptylsiloxane supported on fumed SiO2 is described. A Displayed a high activity and selectivity for hydrogenation of olefins in proper solvents under 1 atm. H at 30-50°. Styrene, a-methylstyrene, acrylonitrile, acrylic acid and its ester were hydrogenated smoothly within 1.5-2.5 h. Cyclopentadiene, a-pinene, arom., cyano, carboxy and ester groups could not be hydrogenated under the same conditions. Protic solvents, e.g. MeOH, iso-PrOH and HOAc, remarkably promoted the catalytic activity of A but some nonprotic solvents, e.g. DMF and C6H6, also exhibited good behavior. Since H2O could be used as reaction medium, A was esp. suitable for the hydrogenation of the ethylenic double bonds which are linked to arom., cyano, carboxy and ester groups. Furthermore, it could be reused several times without serious loss of activity.

Keywords

palladium diphenylphosphinohydroxyheptylsiloxane hydrogenation catalyst

phosphinoheptylsiloxane platinum polymer
siloxane phosphinoheptyl platinum polymer

Index Entries

Carboxyl group
Cyano group
Aromatic hydrocarbons, reactions
Esters, reactions
hydrogenation of, by palladium
diphenylphosphinohydroxyheptylsiloxane polymer
supported on silica, attempted
Solvent effect
on olefin hydrogenation by palladium siloxane polymer
Hydrogenation catalysts
palladium diphenylphosphinohydroxyheptylsiloxane polymer
supported on silica, for olefins
80-56-8
542-92-7, reactions
hydrogenation of, by palladium
diphenylphoshpinohydroxyheptylsiloxane polymer
supported on silica, attempted
79-10-7, reactions
98-83-9, reactions
100-42-5, reactions
107-13-1, reactions
140-88-5
hydrogenation of, by palladium
diphenylphosphinohydroxyheptylsiloxane polymer
supported on silica
13820-53-6, reaction products with
(trimethoxysilylhydroxyoxaheptyl)diphenylphosphine modified by silica
84613-68-3, silica-modified, reaction products with sodium
tetrachloropalladate
prepn. and catalytic activity of, for olefin hydrogenation

97:137806
g-Radiation produced supported metal complex catalysts. V.
Determination of rhodium by atomic absorption spectroscopy.
Hartley, F. R.; Murray, S. G.; Nicholson, P. N. (Dep. Chem. Metall., R.
Mil. Coll. Sci., Shrivenham/Wilts. SN6 8LA, UK). J. Organomet. Chem.,
231(4), 369-72 (English) 1982. CODEN: JORCAI. ISSN: 0022-328X.
DOCUMENT TYPE: Journal CA Section: 79 (Inorganic Analytical
Chemistry) Section cross-reference(s): 29, 67
Rh in polymer-supported catalysts as well as in organorhodium
complexes can be detd. conveniently by at. absorption spectroscopy.
Following oxidative destruction of the org. material in a mixt. of concd.
H2SO4 and H2O2, an aq. soln. to which 2% La nitrate has been added
is aspirated into an air/C2H2 flame. A linear calibration graph is
obtained at 343.5 nm for Rh concns. in the range 0-20 ppm. Stds. are
prepd. by oxidizing [RhH(CO)(PPh3)3] in the same way as the sample.
In this way interference by chloride is avoided. This interference is
important when large amts. of chloride are present as in com. Rh
trichloride in aq. HCl soln. stds.

Keywords

rhodium detn atomic absorption
polymer supported catalyst analysis rhodium
organorhodium compd analysis rhodium

Index Entries

Catalysts and Catalysis
Hydroformylation catalysts
rhodium detn. in polymer-supported, by at. absorption spectroscopy
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rhodium, rhodium detn. in, by at. absorption spectrometry
9003-07-0
catalysts supported on, rhodium detn. in, by at. absorption spectrometry
7440-16-6, analysis
detn. of, in polymer-supported catalysts and org. complexes by at. absorption spectrometry
13938-94-8
82914-98-5
82929-90-6
82929-91-7
82929-92-8
83018-40-0
83028-70-0
rhodium detn. in, by at. absorption spectrometry

105:194282
Sweetening hydrocarbon fractions in the absence of an alkali compound.
Mimoun, Hubert; Bonnaudet, Serge; Saussine, Lucien; Franck, Jean-pierre (Institut Francais du Petrole, Fr.). Eur. Pat. Appl. EP 181800 A1 21 May 1986, 19 pp. DESIGNATED STATES: R: DE, GB, IT, NL. (French). (European Patent Organization). CODEN: EPXXDW. CLASS: ICM: C10G027-10. ICS: B01J031-18.
APPLICATION: EP 85-402045 22 Oct 1985. PRIORITY: FR 84-17228 9 Nov 1984. DOCUMENT TYPE: Patent CA Section: 51 (Fossil Fuels, Derivatives, and Related Products)
A hydrocarbon charge contg. S compds. is sweetened by percolation through a layer of a catalyst based on $^{3}1$ complex consisting of $^{3}1$ chelate of $^{3}1$ metal with $^{3}1$ multidentate ligand with $^{3}1$ amide group and with general formula ML2 or M(LH)2X2, in which M is a transition metal, X is an anion, and L is a bidentate ligand based on picolinic acid amide or a primary amine deriv., a tridentate ligand based on a bis(picolinic acid) imide or a NH3-substituted deriv., a tetradentate ligand based on a bis(picolinic acid) imide or a deriv. substituted by compds. with $^{3}2$ primary amine groups sepd. by $^{3}2$ C atoms, a ligand based on a cyclic dipicolinic acid bisimide or an NH3 deriv., or a ligand based on an oxalic acid diamide, or phthalic acid diamide, or a deriv. M may be Co, Ni, Fe, Cu, or Mn; the catalyst support may be C, SiO2, Al2O3, an aluminosilicate, a zeolite, or an ion exchanger. Thus, the complex Co (phepia H)2Cl2 was prepd. from CoCl2 and N-phenyl-picolinamide (phepia H), dissolved in water, and percolated through activated C to impregnate; treatment of kerosine contg. total S 700 and mercaptan S 140 ppm at 160-300° in air for 50 h decreased the mercaptan S concn. to 2 ppm.

Keywords

petroleum sweetening metal picolinamide complex
dipicolinamide metal complex petroleum sweetening
kerosine sweetening metal picolinamide complex

Index Entries

Thiols, uses and miscellaneous
removal of, in sweetening of petroleum fractions, supported transition metal picolinamide complexes as agents for
Kerosine

sweetening of, supported transition metal picolinamide
complexes as agents for
Petroleum refining
sweetening, supported transition metal picolinamide complexes
as agents for
7440-44-0, uses and miscellaneous
activated, support, for transition metal complexes with picolinamide
derivs., in sweetening of petroleum fractions
499-83-2, derivs., transition metal complexes
1452-77-3, derivs., transition metal complexes
2758-86-3, transition metal complexes
6707-97-7, derivs., transition metal complexes
7439-89-6, complexes with picolinamide derivs.
7439-96-5, complexes with picolinamide derivs.
7440-02-0, complexes with picolinamide derivs.
7440-48-4, complexes with picolinamide derivs.
7440-50-8, complexes with picolinamide derivs.
104583-93-9, derivs., transition metal complexes
104583-94-0, transition metal complexes
104583-95-1, transition metal complexes
104583-96-2, transition metal complexes
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104443-52-9
support, for transition metal complexes with picolinamide derivs., in
sweetening of petroleum fractions
70559-57-8
70559-58-9
96095-37-3
105035-95-8
105035-96-9
105035-97-0
105035-98-1
105035-99-2
105036-00-8
105036-01-9
105036-02-0
105036-03-1
105038-83-3
105058-73-9
supported, in sweetening of petroleum fractions

104:227128
Polymer-protected metal complex for gas separation. II. Crosslinked
polystyrene-supported aluminum copper(I) halide as solid carbon
monoxide adsorbent.
Hirai, Hidefumi; Hara, Susumu; Komiyama, Makoto (Fac. Eng., Univ.
Tokyo, Tokyo 113, Japan). Bull. Chem. Soc. Jpn., 59(4), 1051-8
(English) 1986. CODEN: BCSJA8. ISSN: 0009-2673. DOCUMENT
TYPE: Journal CA Section: 49 (Industrial Inorganic Chemicals)
Macroreticular (MR)-type cross-linked polystyrene-supported AlCuCl4
is prepd. by refluxing MR-type polystyrene (divinylbenzene content
20%), AlCl3, and CuCl in C6H6, PhMe, CS2, or CH2Cl2, followed by
evapn. of the liq. phase. All the polystyrene-supported AlCuCl4 exhibit
rapid and reversible adsorptions of CO. For the adsorbent prepd.
using PhMe as solvent, the equil. molar ratio of adsorbed CO to the
charged CuCl is 0.83 at 20° under 1 atm (initial partial pressure of CO
0.90 atm). Desorption of CO is carried out at 7 mm Hg at 20° for 10
min. The equil. molar ratio of adsorbed CO to the charged CuCl in the
2nd adsorption is 0.56. In the following adsorptions, the equil. molar
ratios are virtually const. at 0.56. Usage of either gel type cross-linked
polystyrenes or a linear polystyrene in place of the MR-type
cross-linked polystyrene results in CO adsorbents having poor abilities
with respect to both adsorption rates and capacities. The adsorbing

capacities of the CO adsorbents prepd. from Al halide, Cu halide, and the MR-type cross-linked polystyrene decrease as follows: AlCl3-CuCl system > AlBr3-CuBr system »AlI3-CuI system u AlCl3-CuI system u AlI3-CuCl system u0.

Keywords

carbon monoxide adsorbent polymer support
aluminum copper chloride adsorbent gas

Index Entries

27803-79-8
adsorbent, polystyrene-supported, for carbon monoxide sepn. from gas mixts.
630-08-0, preparation
sepn. of, from gases, aluminum cuprous chloride supported on polystyrene for
9003-53-6
supported by, of aluminum cuprous chloride, for carbon monoxide recovery

105:232995
Supported metal complexes as hydrogenation catalysts.
Ermakov, Yu. I.; Arzamaskova, L. N. (Inst. Catal., Novosibirsk 630090, USSR). Stud. Surf. Sci. Catal., 27(Catal. Hydrogenation), 459-95 (English) 1986. CODEN: SSCTDM. ISSN: 0167-2991. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 22, 51
A review with 206 refs.

Keywords

review metal complex hydrogenation catalyst

Index Entries

Transition metals, compounds
complexes, hydrogenation catalysts from supported
Hydrogenation catalysts
supported metal complexes

105:27004
Polymer bound Fischer-Tropsch catalysts.
Hsu, Wen Liang; Kurr, Richard John; Maly, Neil Arthur; Strozier, Robert William; Parker, Dane Kenton (Goodyear Tire and Rubber Co. , USA). Eur. Pat. Appl. EP 169161 A2 22 Jan 1986, 47 pp. DESIGNATED STATES: R: DE, FR, GB, IT. (English). (European Patent Organization). CODEN: EPXXDW. CLASS: ICM: C07C001-06. ICS: C07F015-00; B01J031-22; C07F013-00. APPLICATION: EP 85-630113 12 Jul 1985. PRIORITY: US 84-631698 17 Jul 1984. DOCUMENT TYPE: Patent CA Section: 51 (Fossil Fuels, Derivatives, and Related Products) Section cross-reference(s): 29
A process for the conversion of synthesis gas to hydrocarbons comprises contacting synthesis gas with a resin-metal (complex) catalyst of general formula A(CH2)xL.(M)y(R)n [I; A = macroreticular divinylbenzene-styrene copolymer resin with >5% crosslink d.; x = 0 or 1; L = ligand selected from dipyridyl, 2-aminopyridine, 2-aminophenol, 2-iminopyridine, Na or K anthranilate, and anthranilic acid; if y = 1, M = Group 8-10 (VIII) metals, if y = 2-8, M = Group 8-10 (VII) metals, H, Mn,

K, and Na; R = CO, or halogen; n = 0-24] in the vapor phase at 175-300° and >100 kPa. Thus, I [70:30 styrene-divinylbenzene resin, L = anthranilic acid, metal complex = Ru3(CO)12] was activated and tested at 250°, 1034 kPa, 2:1 H-CO molar ratio, and 200 h-1 gas (vol.) space velocity for 4 h; the product selectivities for C1, C2, and C3+ hydrocarbons were 21.44, 3.18, and 75.38%, resp., at a 76.99% CO conversion.

Keywords

Fischer Tropsch resin metal catalyst
polystyrene ruthenium carbonyl anthranilate catalyst
polymer bound Fischer Tropsch catalyst

Index Entries

Hydrogenation catalysts
polymer-supported metal complexes, for Fischer-Tropsch reaction
Hydrocarbons, preparation
C>2, prepn. of, in Fischer-Tropsch reaction, by polymer-bound metal complex catalysts
95-55-6, reaction products with chloromethylated polystyrene and metal halide carbonyl complexes
118-92-3, reaction products with chloromethylated polystyrene and metal halide carbonyl complexes
366-18-7, reaction products with chloromethylated polystyrene and metal halide carbonyl complexes
504-29-0, reaction products with chloromethylated polystyrene and metal halide carbonyl complexes
552-37-4, reaction products with chloromethylated polystyrene and metal halide carbonyl complexes
9003-53-6, crosslinked, reaction products with anthranilic acid or amines and metal carbonyls or halides
10049-07-7, complexes with chloromethylated polystyrene-2,2'-bipyridine reaction products
12375-24-5, complexes with chloromethylated polystyrene-anthranilic acid or 2,2'-bipyridine reaction products
12563-74-5, complexes with chloromethylated polystyrene-2-aminopyridine reaction products
17685-52-8, complexes with chloromethylatedpolystyrene-2,2'-bipyridine reaction products
34438-91-0, complexes with chloromethylated polystyrene-2,2'-bipyridine reaction products
35646-82-3, complexes with chloromethylated polystyrene-2,2'-bipyridine reaction products
37960-65-9, reaction products with chloromethylated polystyrene and metal halide carbonyl complexes
catalysts, for Fischer-Tropsch reaction
10049-08-8, complexes with chloromethylated polystyrene and metal chelating agents
15243-33-1, complexes with chloromethylated polystyrene and chelating agents
85781-88-0, complexes with chloromethylated polystyrene-anthranilic acid reaction products
catalysts, for Fischer-tropsch reaction
630-08-0, reactions
hydrogenation of, in Fischer-Tropsch reaction, polymer resin-metal complex catalysts for

104:151202
Polymer-supported complexes as catalysts for hydrogenation.
Teng, Kang; Li, Hong; Sun, Juntan; He, Binglin (Inst. Polym. Chem., Nankai Univ., Tianjin, Peop. Rep. China). Shiyou Huagong, 14(4),

230-6 (Chinese) 1985. CODEN: SHHUE8. DOCUMENT TYPE:
Journal; General Review CA Section: 45 (Industrial Organic Chemicals,
Leather, Fats, and Waxes)
A review with 14 refs. with emphasis on prepn. and uses of
polymer-supported metal complexes as catalysts for hydrogenation.

Keywords

hydrogenation catalyst metal complex review

Index Entries

Polymer-supported reagents
metal compds., catalysts, for hydrogenation
Hydrogenation catalysts
metal compds., polymer-supported, prepn. and uses of

104:148942
Syntheses and catalytic actions of organosilicon polymer-supported
metal complexes.
Huang, Meiyu; Ren, Changyu; Zhou, Yanzhu; Zhao, Li; Cao, Xianpeng;
Dong, Diaoling; Liu, Yun; Jiang, Yingyan (Inst. Chem., Acad. Sin.,
Peking 100080, Peop. Rep. China). Organosilicon Bioorganosilicon
Chem., [Proc. Int. Symp. Organosilicon Chem.], 7th, Meeting Date
1984, 275-80. Edited by: Sakurai, Hideki. Horwood: Chichester, UK.
(English) 1985. CODEN: 54GSA7. DOCUMENT TYPE: Conference;
General Review CA Section: 29 (Organometallic and
Organometalloidal Compounds)
A review with 25 refs. including discussion of hydrogenation,
hydrogenolysis, hydrosilylation, oxidn., and hydroformylation catalysts.

Keywords

review silicon org compd
catalyst organosilicon supported metal complex

Index Entries

Catalysts and Catalysis
organosilicon polymer supported metal complexes
7440-21-3, polymer-supported metal complexes of org. derivs.
prepn. and catalytic activity of

104:116919
Catalyst based on a phthalocyanine metal complex.
Zemtseva, L. I.; Titov, V. I.; Antipenko, V. R.; Ivasenko, V. L. (Siberian
Institute of Petroleum Chemistry; Tomsk Polytechnic Institute, USSR).
U.S.S.R. SU 1197728 A1 15 Dec 1985 From: Otkrytiya, Izobret. 1985,
(46), 34. (Russian). (Union of Soviet Socialist Republics). CODEN:
URXXAF. CLASS: ICM: B01J037-02. ICS: B01J031-22.
APPLICATION: SU 84-3806112 11 Jul 1984. DOCUMENT TYPE:
Patent CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic
Reaction Mechanisms)
The catalyst is produced by impregnating a support with a Co or Fe
chloride soln., the solvent is removed, and the metal phthalocyanine
complex is synthesized directly on the surface of a support. The
technol. is simplified by impregnating the support with a soln. of a metal
chloride in Me2CO and performing synthesis by fusion of the
impregnated support with phthalic anhydride and urea in the presence
of ammonium molybdate at 180-220° for 3-4 h.

Keywords

cobalt phthalocyanine catalyst manuf
iron phthalocyanine catalyst manuf
metal phthalocyanine catalyst manuf

Index Entries

Catalysts and Catalysis
cobalt and iron phthalocyanines, manuf. of supported
132-16-1
3317-67-7
catalyst, manuf. of supported
12027-67-7
57-13-6, uses and miscellaneous
85-44-9
in manuf. of supported cobalt and iron phthalocyanine catalysts

103:76805
Preparation of cyclic polyacrylonitrile-metal complexes and their catalytic activities for the oxidation of cumene and ethylbenzene.
Bai, Ruke; Zong, Huijuan; He, Jigang; Jiang, Yingyan (Dep. Appl. Chem., China Univ. Sci. Technol., Hefei, Peop. Rep. China). Cuihua Xuebao, 6(2), 191-4 (Chinese) 1985. CODEN: THHPD3. ISSN: 0253-9837. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 45
Silica-supported cyclized polyacrylonitrile-metal complexes of Cu(I), Cu(II), Co(II), Mn(II) were prepd. The catalytic activities of these complexes for the oxidn. of cumene and PhEt were studied. The cyclized polyacrylonitrile-metal complexes are more active catalysts than polyphthalocyanine-metal complexes for the oxidn. of cumene. The catalyst activities of the cyclized polyacrylonitrile-metal complexes are in the order Cu(I) > Cu(II) > Co(II) > Mn(II). The oxidn. reactions of cumene and PhEt with Cu(I) complex almost stop at a certain conversion of the substrates, but they can be carried on again by addn. of more substrates. The Cu(I) complex can be used repeatly with a slight loss of its catalytic activity. The main product is cumyl alc. for the oxidn. of cumene and is acetophenone for PhEt oxidn. The influences of temp., the gram at. ratio of N/metal in the complexes, and additives on the catalytic activities of the complexes were also investigated.

Keywords

oxidn catalyst polyacrylonitrile metal complex
cumene oxidn catalyst polyacrylonitrile
ethylbenzene oxidn catalyst polyacrylonitrile
copper polyacrylonitrile complex catalyst
cobalt polyacrylonitrile complex catalyst
manganese polyacrylonitrile complex catalyst

Index Entries

Transition metals, compounds
polyacrylonitrile complexes, catalysts, silica-supported, for oxidn. of cumene and ethylbenzene
Oxidation catalysts
transition metal cyclized polyacrylonitrile complexes, silica-supported, for cumene and ethylbenzene
7439-96-5, polyacrylonitrile complexes
7440-48-4, polyacrylonitrile complexes
7440-50-8, polyacrylonitrile complexes
25014-41-9, cyclized, transition metal complexes

catalysts, silica-supported, for oxidn. of cumene and ethylbenzene
98-82-8
100-41-4, reactions
oxidn. of, on transition metal polyacrylonitrile complex-silica catalysts

99:71261
Transition metal complexes of polymer-supported macrocyclic ligands.
Caste, Maureen Lynch (Ohio State Univ., Columbus, OH, USA). 228 pp. Avail. Univ. Microfilms Int., Order No. DA8305306 From: Diss. Abstr. Int. B 1983, 43(10), 3232 (English) 1982. DOCUMENT TYPE: Dissertation CA Section: 35 (Chemistry of Synthetic High Polymers)
Abstract Unavailable

Keywords

transition metal complex polymeric
ligand polymeric complex

Index Entries

Transition metals, compounds
complexes with polymer-suppotred macrocyclic ligands
Polymers, uses and miscellaneous
macrocyclic ligands supported by, transition metal complexes of
Chelating agents
macrocyclic, polymer-supported, transition metal complexes

98:205103
Functionalized crosslinked polystyrene resin-supported metal complex catalysts.
Ghosh, Annottam; Bhaduri, Sumit (Indian Explosives Ltd.; Alkali and Chemical Corp. of India Ltd.; Chemicals and Fibres of India Ltd., India). Indian IN 150034 A 3 Jul 1982, 13 pp. (English). (India). CODEN: INXXAP. CLASS: IC: C08F027-00. APPLICATION: IN 78-BO248 21 Aug 1978. DOCUMENT TYPE: Patent CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 35

The prepn. of polystyrene crosslinked resin supported metal complexes as catalysts of the formula I (A = polymer backbone; R and R1 = C1-3 alkyl or benzyl; M = V, Cr, Mo, Fe, Co, Ni, or Cu; acac. = acetylacetonate; n = 1 or 2; and n1 = 0, 1, or 2) consists of reacting the functional crosslinked polystyrene resin with M(O)n1(acac)n+1 in a solvent at 20-130°. Thus, polystyrene resin beads were swollen in toluene and then reacted with Fe(acac)3 for 24 h at 30° to give I with M = Fe; n = 2; and n1 = 0.

Keywords

polystyrene supported metal catalyst
iron acetylacetonate polystyrene catalyst

Index Entries

Catalysts and Catalysis
polystyrene crosslinked complex supported metallic, prepn. of
9003-53-6, alkylated, transition metal complexes
catalysts, prepn. of
14024-18-1

21679-31-2
28984-05-6
reaction of, with polystyrene in catalyst prepn.
3153-26-2
reation of, with polystyrene ,in catalyst prepn.

105:97523
I. Fourier transform infrared photoacoustic spectroscopic studies of supported transition metal complexes. II. Fourier transform far infrared and multinuclear nuclear magnetic resonance studies of crown ether complexes.
McKenna, William Patrick (Univ. Utah, Salt Lake City, UT, USA). 179 pp. Avail. Univ. Microfilms Int., Order No. DA8517652 From: Diss. Abstr. Int. B 1986, 46(8), 2669 (English) 1985. DOCUMENT TYPE: Dissertation CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 22
Abstract Unavailable

Keywords

Fourier transform IR NMR
crown ether complex IR NMR
transition metal complex IR photoacoustic

Index Entries

Transition metals, compounds
complexes, supported, Fourier transform IR photoacoustic
spectral studies of
Infrared spectra
of transition metal complexes and crown ether complexes
Crown compounds
ethers, complexes, Fourier transform IR and NMR of
Nuclear magnetic resonance
multiple, of crown ether complexes

99:194521
Synthesis and activity of silicone-supported transition metal complex catalysts. VI. Hydrogenation of aromatic nitro compounds in the presence of
poly-g-(m-diphenylphosphinophenyl)propylsiloxane-palladium complex as catalyst.
Chen, Yuanyin; Xiao, Chaobo; Liu, Jiwan; Lin, Yigeng; Lu, Xueran (Wuhan Univ., Wuhan, Peop. Rep. China). Wuhan Daxue Xuebao, Ziran Kexueban, (1), 35-41 (Chinese) 1983. CODEN: WTHPDI. ISSN: 0253-9888. DOCUMENT TYPE: Journal CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 67
Pd complex of silicone-supported poly-g-(m-diphenylphosphinophenyl)propylsiloxane catalyzed the selective hydrogenation of some arom. nitro compds. to corresponding arom. amines at 40° under an atm H2 pressure. Protonic solvents, such as, Me2CHOH, 95% EtOH, remarkably promoted the activity of the Pd complex, but aprotic solvent C6H6 was of retardative effect. The catalyst could be recovered and reused without any appreciable loss of catalytic activity as shown in the previous papers about the hydrogenation of olefins.

Keywords

nitro arom hydrogenation catalyst

amine arom

Index Entries

Hydrogenation catalysts
Polymer-supported reagents
palladium-poly(diphenylphosphinophenyl)propylsiloxane, for arom. nitro compds.
Nitro compounds
aryl, hydrogenation of, catalysts for
Amines, preparation
aryl, prepn. of, from arom. nitro compds.
87751-64-2, palladium complexes, silicone bound
catalysts for hydrogenation of arom. nitro compds.
7440-05-3, palladium complexes, silicone bound
hydrogenation catalysts
88-74-4
98-95-3, reactions
99-99-0
100-00-5
100-01-6, reactions
hydrogenation of, catalysts for
95-54-5, preparation
106-47-8, preparation
106-49-0, preparation
106-50-3, preparation
prepn. of, from nitro compds.
62-53-3, preparation
prepn. of, from nitrobenzene

96:41562
Investigation of oxide bound transition metal complexes.
Ward, Michael David (Princeton Univ., Princeton, NJ, USA). 314 pp.
Avail. Univ. Microfilms Int., Order No. 8127756 From: Diss. Abstr. Int. B
1981, 42(6), 2366-7 (English) 1981. DOCUMENT TYPE: Dissertation
CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Abstract Unavailable

Keywords

transition metal catalyst oxide supported

Index Entries

Oxides, uses and miscellaneous
as transition metal complex catalyst supports
Catalysts and Catalysis
transition metal complexes, oxide-supported

96:35752
Effect of gelatinous supports on the behavior of metal-complex catalysts of polymerization.
Kolotsei, I. N.; Popov, V. G.; Davydova, S. L.; Kabanov, V. A. (Vses. Nauchno-Issled. Inst. Org. Sint., Moscow, USSR). Vysokomol. Soedin., Ser. B, 23(5), 368-71 (Russian) 1981. CODEN: VYSBAI. ISSN: 0507-5483. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 39
The kinetics of polymn. of ethylene (I) [74-85-1] in heptane in the presence of a gel-immobilized catalytic system composed of dicyclopentadienyltitanium dichloride (II) [1271-19-8] and

Al(iso-Bu)2Cl (III) [1779-25-5] on a vulcanized SKEPT rubber support at 30-90° and >135° is described. The polymn. rate and activation energy of polymn. of I at >135° are considerably lower in the presence of a gel-immobilized II-III catalytic system than in the presence of free II-III system, presumably due to diffusion-controlled bimol. deactivation of the catalyst and inhibition of chain propagation. Thus, at >135° the active centers of the catalyst diffuse into the solvent and deactive. No decrease in polymn. rate of I is obsd. at >135° when the SKEPT rubber support is replaced by a partially crosslinked 1,2-polybutadiene rubber support, which has a higher affinity for the catalytic complex than SKEPT rubber.

Keywords

kinetics polymn ethylene gel support
cyclopentadienyltitanium catalyst polymn ethylene
aluminum catalyst ethylene polymn
rubber support ethylene polymn
butadiene rubber support ethylene polymn
mechanism polymn ethylene gel support

Index Entries

Polymerization
of ethylene, in presence of gel-immobilized catalyst system, mech. of
Kinetics of polymerization
of ethylene, in presence of gel-immobilized catalyst system, rubber support effect on
Rubber, synthetic
dicyclopentadiene-ethylene-propene, gel-immobilized supports, for aluminum-titanium catalysts, for polymn. of ethylene
Rubber, butadiene, uses and miscellaneous
of 1,2-configuration, gel-immobilized supports, for aluminum-titanium catalysts, for polymn. of ethylene
Polymerization catalysts
supported, gel-immobilized, dicyclopentadienyltitanium dichloride and diisobutylaluminum chloride, for ethylene
1271-19-8
1779-25-5
catalysts, supported, for polymn. of ethylene
74-85-1, reactions
polymn. of, in presence of a gel-immobilized catalytic system, kinetics and mechanism of
25034-71-3
rubber, gel-immobilized supports, for aluminum-titanium catalysts, for polymn. of ethylene

105:6922
Metal cluster growth in the liquid phase. Part 1.
Andrews, Mark P.; Ozin, Geoffrey A. (Chem. Dep., Univ. Toronto, Toronto, ON M5S 1A1, Can.). J. Phys. Chem., 90(13), 2938-44 (English) 1986. CODEN: JPCHAX. ISSN: 0022-3654. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 36
A diffusion (pseudo-) first-order reaction equation is solved anal. subject to a const. (metal vapor) flux boundary condition. This anal. provides a qual. insight into differences regarding the propensity for metal cluster growth in quiescent liq. vs. turbulently mixed polymer films, i.e., the microscale metal vapor analog of the macrosynthetic expt. for polymer-anchored arene metal complexation. Di-Me Me Ph siloxanes are examd. in particular.

Keywords

metal cluster diffusion polymer
arene metal complex polymer
siloxane arene cluster compd

Index Entries

Cluster compounds
growth of polymer-supported, in liq. phase, diffusion in relation to
Diffusion
kinetics of, metal cluster growth in polymer liq. phase in relation to
Polymers, reactions
metal cluster growth in, diffusion kinetics in relation to
Fluorescence
of siloxanes, arene metal cluster growth in relation to
Siloxanes and Silicones, properties
di-Me, Me Ph, fluorescence and excitation spectra of, arene metal complexation and cluster formation in relation to

104:186958
Polyamide-bound metal complex catalysts: synthesis, characterization and catalytic properties.
Michalska, Z. M.; Ostaszewski, B. (Inst. Polym., Tech. Univ., Lodz 90-924, Pol.). J. Organomet. Chem., 299(2), 259-69 (English) 1986.
CODEN: JORCAI. ISSN: 0022-328X. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38
A series of polyamides having different nos. of methylene groups in their repeating units were synthesized by interfacial polycondensation of terephthaloyl chloride with piperazine and aliph. diamines H2N(CH2)nNH2 (n = 2, 6, 10). These materials, which have high thermal stability, were used for immobilization of Rh and Pt complexes. H2PtCl6 and PtCl2(CH3CN)2 and [RhCl(CO)2]2 were used as precursors of the supported catalysts. Low-mol.-wt. analogs of the polyamides were prepd. for a study of the coordination mode between the metal ion and the polymer by IR spectroscopy. The results suggest that the carbonyl oxygen of the polyamide is the site of coordination to both Rh and Pt. The bound catalysts exhibited high activity in hydrosilylation of 1-hexene [592-41-6]. The activities of the Rh complexes were dependent on the structure of the polyamide support, decreasing with increasing distance between the amide groups, and closely parallelled the changes in the degree of crystallinity of the polymers. Repeated use of the polymers bearing Rh complexes showed that the bond between the metal and polyamide is fairly stable.

Keywords

polyamide rhodium complex hydrosilylation catalyst
platinum polyamide complex hydrosilylation catalyst
hexene hydrosilylation catalyst

Index Entries

Polymer-supported reagents
hydrosilylation catalysts, for hexene, platinum or rhodium polyamide complexes as
Polyamides, compounds
phosphonated, reaction products with platinum or rhodium compds., catalysts, for hydrosilylation of hexene
Hydrosilylation catalysts
platinum or rhodium complexes of polyamides, for hexene
1079-66-9, reaction products with polyamides and platinum or rhodium

compds.
13869-38-0, reaction products with phosphonated polyamides
16941-12-1, reaction products with phosphonated polyamides
24938-70-3, phosphonated, reaction products with rhodium or platinum compds.
24938-74-7, phosphonated, reaction products with rhodium or platinum compds.
25639-67-2, phosphonated, reaction products with rhodium or platinum compds.
25722-35-4, phosphonated, reaction products with rhodium or platinum compds.
26913-83-7, phosphonated, reaction products with rhodium or platinum compds.
28213-54-9, phosphonated, reaction products with rhodium or platinum compds.
29561-34-0, phosphonated, reaction products with rhodium or platinum compds.
54398-26-4, reaction products with phosphonated polyamides
55426-08-9, phosphonated, reaction products with rhodium or platinum compds.
catalysts, for hydrosilylation of hexene
592-41-6, reactions
hydrosilylation of, catalysts for, platinum or rhodium complexes of polyamides as
24938-70-3
24938-74-7
25639-67-2
25722-35-4
26913-83-7
28213-54-9
29561-34-0
55426-08-9
prepn. and reaction of, with platinum or rhodium compds.
5326-21-6, reaction products with rhodium compds.
10025-65-7, reaction products with propylbenzamide
10546-70-0, reaction products with rhodium or platinum compds.
prepn. of, as model for polyamide complexes
5326-21-6
10546-70-0
15088-23-0
prepn. of, as model for polyamides
107-10-8, reactions
124-09-4, reactions
reaction of, with benzoyl chloride
100-20-9
reaction of, with butylamine
98-88-4
reaction of, with hexamethylenediamine or propylamine
109-73-9, reactions
reaction of, with terephthaloyl chloride

103:24684
Selective hydrogenation of carbon monoxide to light olefins catalyzed by zeolite-supported metal complex-reducing agent systems.
Komiya, Yukiatsu; Mitsudo, Takeaki; Boku, Hideki; Watanabe, Yoshihisa (Fac. Eng., Kyoto Univ., Kyoto 606, Japan). Sekiyu Gakkaishi, 28(3), 257-63 (English) 1985. CODEN: SKGSAE. ISSN: 0582-4664. DOCUMENT TYPE: Journal CA Section: 51 (Fossil Fuels, Derivatives, and Related Products) Section cross-reference(s): 67
Selective Fischer-Tropsch catalysts were obtained by reducing HY zeolite catalysts contg. metal 2,4-pentanedionates with hydrides. Thus, when a Ru 2,4-pentanedionate-HY zeolite catalyst was used to hydrogenate CO (260°, 1 atm, 1300 h-1 space velocity, 1:1 CO-H ratio)

the conversion was 2.4% and the product distribution was C1 74, C2 10, C3 9, C4 4, C5 2, C6+ 1%, based on CO converted. The same catalyst reduced with LiAlH4 in THF gave 2.0% conversion and the following product distribution: C1 53, C2 15, C3 16, C4 11, C5 3, and C6+ 2%. The improved selectivity may be due to fine, low-valence metal species produced by redn. on the zeolite surface.

Keywords

carbon monoxide hydrogenation zeolite catalyst
redn transition metal hydrogenation catalyst
Fischer Tropsch transition metal redn
ruthenium complex Fischer Tropsch

Index Entries

Hydrogenation catalysts
zeolites, contg. transition metal pentanedionates, reduced with hydrides, for carbon monoxide in Fischer-Tropsch synthesis
Zeolites, uses and miscellaneous
HY, catalysts, contg. metal pentanedionates, reduced with hydrides, for carbon monoxide hydrogenation
97-93-8, uses and miscellaneous
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13770-96-2
16853-85-3
16903-34-7
cocatalyst-reducing agent, for zeolite-based Fischer-Tropsch catalysts
630-08-0, reactions
hydrogenation of, zeolite-based catalysts for
127-08-2
546-89-4
3153-26-2
3396-11-0
13395-16-9
13963-57-0
14024-18-1
14024-48-7
14024-64-7
14284-89-0
14284-92-5
17501-44-9
17524-05-9
zeolite catalyst contg., hydride-reduced, for carbon monoxide hydrogenation
14284-93-6
zeolite catalysts contg., hydride-reduced, for carbon monoxide hydrogenation

100:68760
Characteristics of catalysis by metal complexes fixed on organic supports.
D'yachkovskii, F. S.; Pomogailo, A. D. (USSR). Gomo-i Sopolimerizatsiya A-olefinov na Kompleks. Katalizatorakh, M., 72-83
From: Ref. Zh., Khim. 1983, Abstr. No. 23S359(Russian) 1983.
DOCUMENT TYPE: Journal; General Review CA Section: 35 (Chemistry of Synthetic High Polymers)
Title only translated.

Keywords

review polymn catalyst supported
metal complex catalyst polymn review
org support catalyst polymn review
alkene polymn catalyst review

Index Entries

Polymerization catalysts
metal complexes on org. supports, for alkenes
Alkenes, reactions
polymn. of, metal complexes on org. support as catalysts for

99:54235
Preparation of polymer-supported transition metal complexes with general solvent compatibility.
Arshady, Reza; Corain, Benedetto (Dep. Chem., Imp. Coll., London SW7 2AZ, UK). Transition Met. Chem. (Weinheim, Ger.), 8(3), 182-4 (English) 1983. CODEN: TMCHDN. ISSN: 0340-4285. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
The prepn. and properties of hydrophilic polymer-supported transition metal salt complexes having general solvent compatibility is described and discussed.

Keywords

acrylamide copolymer metal complex
transition metal polymer complex
solvent compatibility metal polymer complex
hydrophilicity metal polymer complex

Index Entries

3251-23-8, compds. with isocyano group-contg. polymers
10049-07-7, compds. with isocyano group-contg. polymers
13138-45-9, compds. with isocyano group-contg. polymers
13395-16-9, compds. with isocyano group-contg. polymers
13939-06-5, compds. with isocyano group-contg. polymers
14220-64-5, compds. with isocyano group-contg. polymers
14694-95-2, compds. with isocyano group-contg. polymers
81616-07-1, reaction products with tosyl chloride, transition metal salt complexes
hydrophilic, solvent compatibility of

98:136553
g-Radiation produced supported metal complex catalysts. Part VI. The preparation of trans-[RhCl(CO)L2] where L = unsaturated tertiary phosphine and the exposure of rhodium(I) complexes to g-radiation.
Hartley, F. R.; Murray, S. G.; Nicholson, P. N. (Dep. Chem. Metall., R. Mil. Coll. Sci., Shrivenham/Wilts., UK). Inorg. Chim. Acta, 76(1), L51-L53 (English) 1983. CODEN: ICHAA3. ISSN: 0020-1693. DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions)
Ten trans-[RhCl(CO)(PPh2R)2] (R = alkenyl or alkenylphenyl) were prepd. and characterized by elemental anal., IR and 1H and 31P NMR methods. The olefinic groups are not coordinated to Rh. These compds., [Rh(acac)(CO)(p-CH2:CHC6H4PPh2)] (acac H = acetylacetone), and [RhH(CO)(PPh3)3] were unaffected by exposure to quite large doses of g-radiation and thus should be suitable for g-radiation grafting to a polymer.

Keywords

rhodium alkenylphosphine carbonyl radiation effect
alkenylphenylphosphine carbonyl rhodium radiation effect
acetylacetonato ethenylphenyldiphenylphosphine rhodium radiation effect
hydrido triphenylphosphine rhodium radiation effect
gamma ray rhodium phosphine stability

Index Entries

Degradation
radiochem., of chlorocarbonylbis(unsatd. tertiary phosphine)rhodium complexes, attempted
65106-72-1
65106-73-2
65106-74-3
85096-30-6
85096-39-5
85096-40-8
85115-55-5
85115-56-6
85115-57-7
85166-04-7
prepn. and g-radiation effect on
14523-22-9
reaction of, with unsatd. tertiary phosphines
17185-29-4
83018-40-0
g-irradn. effect on

97:182912
g-Radiation-produced supported metal complex catalysts. 3. Phosphinated polypropylene supports.
Hartley, Frank R.; Murray, Stephen G.; Nicholson, Philip N. (Dep. Chem. Metall., R. Mil. Coll. Sci., Shrivenham/Wiltshire SN6 8LA, UK).
J. Polym. Sci., Polym. Chem. Ed., 20(9), 2395-408 (English) 1982.
CODEN: JPLCAT. ISSN: 0449-296X. DOCUMENT TYPE: Journal
CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 25, 29, 67
p-Styryldiphenylphosphine was grafted onto polypropylene by g-radiation to give a graft copolymer [76585-25-6]. However, olefinic phosphines in general do not readily undergo such grafting. Among the many other olefinic phosphines examd., only 1-(4-diphenylphosphinophenyl)-1-propene [83558-91-2] and vinyldiphenylphosphine were grafted successfully and both had low grafting yields. The optimum conditions for grafting involve low dose rates and high total doses of g-radiation in DMSO as solvent. This grafting is sensitive to impurities, and inhomogeneity in the product readily results, esp. at high grafting yields. O must be rigorously excluded if oxidn. of grafted P(III) to P(V) is to be avoided. Mass spectrometry has shown that more than one olefinic phosphine binds to a single site in the polymer. Solid-state, high-resoln. 31P-NMR is a valuable technique for characterizing the grafted polymer. The prepn. and characterization of the following hitherto unreported compds. is described: 3-(4-diphenylphospinophenyl)-1-propene [58666-85-6], 4-(4-diphenylphosphinophenyl)-1-butene [83558-88-7], 3-(4-diphenylphosphinophenyl)-2-methyl-1-propene [83558-90-1], 3-(4-chlorophenyl)-1-propene [1745-18-2], 4-(4-bromomethyl-1-propene [15451-32-8], and 3-(4-bromophenyl)-2-methyl-1-propene [83558-89-8].

Keywords

phosphinated propene graft polymer
styryldiphenylphosphine graft polymer propene
phenylphosphinophenylpropane prepn
phenylphosphinophenylbutene prepn
chlorophenylpropane prepn
bromophenylbutene prepn

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Gamma ray, chemical and physical effects
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Polymerization
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4489-23-0
Grignardization and reaction with chlorodiphenylenephosphine
106-37-6
Grignardization of and reaction with chloromethylpropene
56-81-5, uses and miscellaneous
67-56-1, uses and miscellaneous
76-05-1, uses and miscellaneous
98-29-3
107-21-1, uses and miscellaneous
110-86-1, uses and miscellaneous
7647-01-0, uses and miscellaneous
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64816-42-8
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83560-31-0
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1745-18-2
15451-32-8
prepn. and Grignardization and reaction with chlorodiphenylphosphine
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73106-85-1
83558-88-7
83558-90-1
83558-91-2
prepn. and characterization of
83558-89-8
prepn. and reaction with lithium diphenylphosphide
4541-02-0
reaction of, with (bromophenyl)methylpropene and with (chloromethyl)propene
106-95-6, reactions
reaction of, with Grignard reagent from bromochlorobenzene
563-47-3
reaction of, with Grignard reagent of dibromobenzene
1079-66-9
reaction of, with Grignard reagents

97:99043
Catalysis-the most important resource for the economy of raw material and energy resources and also for increasing production quality.
Boreskov, G. K. (Inst. Katal., Novosibirsk, USSR). Zh. Vses. Khim. O-va., 27(3), 267-74 (Russian) 1982. CODEN: ZVKOA6. ISSN: 0373-0247. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 48, 52
A review with 27 refs. on (1) methods for studying catalysis, (2) nonsteady-state catalysis, (3) supported transition-metal complex catalysis, (4) permeable cryst. catalysts, and (5) solar-energy storage by photolytic catalysis.

Keywords

review catalysis
catalyst exptl study method review
nonsteady state catalysis review
supported transition metal complex catalysis review
permeable cryst catalyst review
solar energy storage photolysis catalysis review

Index Entries

Transition metals, compounds
complexes, catalysis by support
Photolysis catalysts
for solar energy storage
Catalysts and Catalysis
study method for
Membranes
permeable, catalysis by
Energy
solar, photolytic catalysts for storage of
Catalysts and Catalysis
unsteady-state

97:61687
Synthesis and activity of silicone-supported transition metal complex catalysts. II. Some properties of poly(g-(m-diphenylphosphinophenyl)propylsiloxane)-palladium complex.
Chen, Yuanyin; Liu, Jiwan; Lin, Yigeng; Ni, Jijin; Xiao, Chaobo; Wan, Yuhua (Wuhan Univ., Wuhan, Peop. Rep. China). Wuhan Daxue Xuebao, Ziran Kexueban, (1), 41-8 (Chinese) 1982. CODEN: WTHPDI. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 22, 45
Poly-g-(m-diphenylphosphinophenyl)propylsiloxane-Pd complex was prepd. and the activity in hydrogenation of olefins investigated. g-(m-Chlorophenyl)propyltrichlorosilane was esterified with anhyd. ethanol to give g-(m-chlorophenyl)propyltriethoxysilane. It was further reacted with Ph2PK under N and immobilized by fumed SiO2. The phosphine-contg. polymer was used to prep. the title complex by treatment with Na2PdCl4.4H2O. In hydrogenaton of olefins, the title complex exhibited high activity and unusual selectivity. Furthermore, it can be reused without serious loss of activity.

Keywords

hydrogenation olefin palladium polymer catalyst
phosphinosiloxane polymer palladium hydrogenation catalyst

Index Entries

Alkanes, reactions
hydrogenation of, synthesis and activity of
palladium-poly(diphenylphosphinophenyl)propylsiloxane
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Hydrogenation catalysts
palladium-poly(diphenylphosphinophenyl)propylsiloxane complex,
for olefins synthesis, activity of
82539-66-0
catalyst from palladium and, for hydrogenation of olefins, synthesis
and activity of
7440-05-3, uses and miscellaneous
catalyst from poly-g-(diphenylphosphinophenyl)propylsiloxane and,
for olefins, synthesis and activity of
13820-53-6, reaction product with chlorphenylpropyltriethoxysilane
palladium catalyst with, for hydrogenation of olefins

97:7147
Synthesis and activity of silicone-supported transition metal complex
catalysts. I. Synthesis of g-halophenylpropyltrichlorosilane and
g-halophenylpropylakyldichlorosilane monomers and their
tetraethoxysilane copolymers.
Chen, Yuanyin; Liu, Jiwan; Lin, Yigeng; Ni, Jijin; You, Jiang; Xiao,
Chaobo; Wang, Yuhua (Wuhan Univ., Wuhan, Peop. Rep. China).
Wuhan Daxue Xuebao, Ziran Kexueban, (4), 61-7 (Chinese) 1981.
CODEN: WTHPDI. DOCUMENT TYPE: Journal CA Section: 37
(Plastics Manufacture and Processing)
The title monomers were prepd. from the corresponding
halogen-substituted allylbenzenes by hydrosilylation with trichlorosilane
[10025-78-2] or alkyldichlorosilanes in the presence of a chloroplatinic
acid catalyst. The yields were 54-70% in general, but in a few
instances nearly 80% was obtained. These monomers were copolymd.
with Et orthosilicate [78-10-4].

Keywords

hydrosilylation chlorosilane haloallylbenzene
silane halophenylpropylchloro
chloroplatinic acid hydrosilylation catalyst
silicone support transition metal catalyst

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complexes, catalysts, supports for, silicones as
Catalysts and Catalysis
transition metal complexes, supports for, silicones as
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16941-12-1
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1789-58-8
10025-78-2
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2294-43-1
3840-17-3
18257-89-1
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81744-77-6
81744-78-7
81744-79-8
81744-80-1
81744-81-2
81744-82-3
81744-83-4
81744-84-5
81744-85-6
81744-86-7
81744-87-8
prepn. and polymn. of, with tetraethoxysilane

96:60187
Study of the structure of supported carbonyl complexes of transition metals by optical spectroscopic methods.
Kadushin, A. A. (USSR). Katalit. Prevrashcheniya Uglevodorodov, Irkutsk, 3-20 From: Ref. Zh., Khim. 1981, Abstr. No. 22B1478(Russian) 1980. DOCUMENT TYPE: Journal CA Section: 73 (Optical, Electron, and Mass Spectroscopy and Other Related Properties) Section cross-reference(s): 22, 67
Title only translated.

Keywords

transition metal carbonyl complex spectra
optical spectroscopy transition metal complex

Index Entries

Transition metals, compounds
carbonyl complexes, as catalysts for olefin disproportionation, optical spectra in study of
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catalysts, for olefin disproportionation, optical spectra in study of
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Molecular structure-property relationship
spectra, of transition metal carbonyl catalysts, for alkene disproportionation
Carbonyls
transition metal, catalysts, for olefin disproportionation, optical spectra in study of
7439-98-7, carbonyl complexes
7440-15-5, carbonyl complexes
7440-33-7, carbonyl complexes
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1309-48-4, uses and miscellaneous
catalysts contg., for alkene disproportionation, optical spectrum study of
115-07-1, properties

disproportionation of, optical spectra in study of transition metal carbonyl catalyzed

96:20244
The catalytic substitution of metal carbonyls and substituted metal carbonyls by isonitriles in the presence of rhodium(I) and polymer-supported rhodium(I) complexes.
Albers, Michel O.; Coville, Neil J.; Nicolaides, Christakis P.; Webber, Ronald A.; Ashworth, Terence V.; Singleton, Eric (Dep. Chem., Univ. Witwatersrand, Johannesburg 2001, S. Afr.). J. Organomet. Chem., 217(2), 247-50 (English) 1981. CODEN: JORCAI. ISSN: 0022-328X.
DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds)
Metal carbonyls and substituted metal carbonyls, under relatively mild reaction conditions, in the presence of isonitriles, undergo catalytic CO substitution by Rh(I) and polymer-supported Rh(I) complexes. The reaction provides a facile route to the synthesis of transition metal isonitrile complexes. Thus, reaction of Fe(CO)4L (L = maleic anhydride) with Me3CNC in presence of catalytic amts of RhCl(PPh3)3 gave Fe(CO)4-n(Me3CNC)nL (n = 1-3).

Keywords

isonitrile metal complex
iron isonitrile complex
rhodium isonitrile complex
ruthenium isonitrile complex
catalyst rhodium substitution metal carbonyl

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Carbonyls
iron, catalytic substitution in
13463-40-6
56448-44-3
63866-73-9
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13938-94-8
15529-49-4
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13938-94-8
14694-95-2
14694-95-2, polystyrene-bound
catalyst, for metal carbonyl substitution
65255-59-6
72932-42-4
75517-50-9
79670-59-0
79683-57-1
79736-19-9
80181-85-7
80191-17-9
80191-18-0
80191-19-1
prepn. of

109:8362
Hydrogenation catalyzed by silica-supported polystannazane-palladium and -platinum complexes.
Cao, S. K.; Huang, M. Y.; Jiang, Y. Y. (Inst. Chem., Acad. Sin., Beijing 100080, Peop. Rep. China). Polym. Bull. (Berlin), 19(4), 347-52

(English) 1988. CODEN: POBUDR. ISSN: 0170-0839. DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 37, 78
Silica-supported polystannazane and its Pd and Pt complexes were synthesized and the two complexes were used to catalyze the hydrogenation of nitro and carbonyl compds. and compds. contg. C:C bonds. The hydrogenation of carbonyl compds. could be controlled in the alc. stage.

Keywords

hydrogenation catalyst polystannazane palladium
platinum polystannazane hydrogenation catalyst

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98-86-2, reactions
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108-94-1, reactions
555-16-8, reactions
592-41-6, reactions
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115012-90-3, platinum and palladium complexes
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106-50-3, preparation

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74-89-5, preparation
prepn. of, by hydrogenation of nitromethane, polystannazane metal complex catalysts for
106-49-0, preparation
prepn. of, by hydrogenation of nitrotoluene, polystannazane metal complex catalysts for

111:233723
Polyethylene and elastomeric polypropylene using alumina-supported bis(arene) titanium, zirconium, and hafnium catalysts.
Tullock, Charles W.; Tebbe, Frederick N.; Mulhaupt, Rolf; Ovenall, Derick W.; Setterquist, Robert A.; Ittel, Steven D. (Cent. Res. Dev. Dep., E. I. du Pont de Nemours and Co., Wilmington, DE 19880-0328, USA). J. Polym. Sci., Part A: Polym. Chem., 27(9), 3063-81 (English) 1989. CODEN: JPACEC. ISSN: 0887-624X. DOCUMENT TYPE:
Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 36, 39
Bis(arene) complexes of zerovalent Ti, Zr, and Hf supported on partially dehydroxylated, fumed alumina are effective catalysts for polymn. of olefins. The zerovalent complexes react with surface hydroxyls with loss of one equiv. of arene to yield the active species. The polyethylenes derived from these catalysts are very high mol. wt. Polymn. of propylene yields elastomeric stereoblock polymers which are composed of isotactic and stereoirregular sequences. The polymers are stiffer than polypropylenes obtained with similar catalysts derived from tetra(neophyl)zirconium. The chain microstructures of the various components of the whole polymers were characterized by 13C-NMR and solvent extn. studies. The ether sol. component of these polymers is of a relatively high mol. wt. and the microstructure of the backbone is largely stereoirregular. It is the cocrystn. of this fraction of the polymer with the cryst., isotactic fractions which is crit. to the obsd. elastomeric properties.

Keywords

alumina supported bisarene metal complex
olefin polymn catalyst bisarene complex
zirconium bisarene complex supported catalyst
titanium bisarene complex supported catalyst
hafnium bisarene complex supported catalyst
polyethylene bisarene metal complex catalyst
elastomeric polypropylene bisarene metal catalyst
microstructure polypropylene bisarene metal catalyst

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97-93-8, uses and miscellaneous
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55527-82-7
57347-27-0
123860-34-4
123860-35-5
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1344-28-1, uses and miscellaneous
supports, for bis(arene) titanium, zirconium and hafnium catalysts, for polymn. of ethylene and propylene, polymer characteristics in relation to

114:163581
Functionalization of silica gel: application for the catalytic oxidation of alkanes.
Kurusu, Yasuhiko; Neckers, D. C. (Cent. Photochem. Sci., Bowling Green State Univ., Bowling Green, OH 43403, USA). J. Org. Chem., 56(6), 1981-3 (English) 1991. CODEN: JOCEAH. ISSN: 0022-3263.
DOCUMENT TYPE: Journal CA Section: 24 (Alicyclic Compounds)
The treatment of silica gel with Me2NCH2CH2CH2Si(OMe)3 gave (dimethylamino)propylated silica gel which was complexed with Fe(2+). The catalysts were active in the aerobic oxygenation of alkanes; one catalyst was active for dioxygen oxidn. under mild conditions. A mixt. of cyclohexane, (dimethylamino)propylated silica gel-Fe(2+) complex, Zn,

and AcOH was stirred under static oxygen pressure for 20.5 h to give cyclohexanol and cyclohexanone in a 8:1 ratio.

Keywords

aminopropylated silica gel metal oxidn catalyst
cyclohexane oxidn silica gel metal complex
iron silica gel complex oxidn catalyst
oxidn catalyst silica gel aminopropylated metal
silica gel aminopropylated metal oxidn catalyst

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10124-43-3, complex with (dimethylamino)propylated silica gel
16547-58-3, complex with (dimethylamino)propylated silica gel
18939-61-2, complex with (dimethylamino)propylated silica gel
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108-93-0, preparation
prepn. of, by oxidn. of cyclohexane with dioxygen in presence of (dimethylamino)propylated silica gel-metal complex as catalyst

111:233945
High-surface-area and low-conductivity pyrrole (co)polymers for manufacture of catalyst compositions.
Yodice, Richard (Lubrizol Corp., USA). U.S. US 4839322 A 13 Jun 1989, 16 pp. Cont. of U.S. Ser. No. 859,571, abandoned. (United States of America) CODEN: USXXAM. CLASS: ICM: C25B003-02. ICS: B01J031-06. NCL: 502159000. APPLICATION: US 87-65159 24 Jun 1987. PRIORITY: US 86-859571 5 May 1986. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38, 67
The title (co)polymers, which are treated with a catalytic active material such as a transition metal to produce an oxygen redn. catalyst, are prepd. by (A) immersing an electronically conductive surface in an

electrolytic bath comprising ³1 liq. and ³1 non-miscible liq. or gas or finely divided solid particles where in a pyrrole or copolymerizable mixt. contg. a pyrrole is one of the liqs. or is dissolved in at least one of the liqs., (B) passing an elec. current to (co)polymerize the pyrrole (mixt.), and (C) treating the pyrrole (co)polymers in the presence of a strong base to substantially increase the surface area and substantially deprotonate the copolymers. Thus, electrochem. polymg. pyrrole 40, Na lauryl sulfate 40, polyethylene glycol 20, and H2O 1600 g in 200 mL heptane, deprotonating the polypyrrole film with KOMe, and reacting with I2 gave an iodine-polypyrrole complex useful as a Lewis acid catalyst.

Keywords

polypyrrole transition metal complex catalyst
iodine polypyrrole Lewis acid catalyst

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Lewis acids
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7439-96-5, uses and miscellaneous
7440-02-0, uses and miscellaneous
7440-04-2, uses and miscellaneous
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7440-50-8, uses and miscellaneous
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7726-95-6, uses and miscellaneous
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20074-52-6, uses and miscellaneous
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373-02-4
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30604-81-0
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110:7601
Transformations of unsaturated compounds in the presence of heterogenized complexes of transition metals. Synthesis of heterogenized water-soluble metal-complex catalysts.
Kukolev, V. P.; Balyushina, N. A.; Evoyan, Z. K.; Matosyan, V. A.; Chukhadzhyan, G. A. (Nauchno-Proizvod. Ob'edin. "Nairit", USSR).
Arm. Khim. Zh., 41(3), 146-51 (Russian) 1988. CODEN: AYKZAN.

ISSN: 0515-9628. DOCUMENT TYPE: Journal CA Section: 23
(Aliphatic Compounds) Section cross-reference(s): 35
Treating chloromethylated styrene-divinylbenzene copolymer with Li3P in THF and then with R3RhCl, R2RuCl2, R4Pt, R2PdHCl, or R3Rh(CO)R1 (R = Ph3P; R1 = H, Cl) gave 6 corresponding title catalysts. The polymer-bound Rh and Ru complexes catalyzed redn. of 1-heptene by aq. HCO2H, HCO2Na, and esp. their mixt. in £40% yield at 40-100°; redn. was promoted by Me2NCHO. CH2:CHR2 (R2 = CHO, CH2OH, OAc, OBu) and MeCH:CHCHO were analogously reduced to give £60% EtR2 and PrCHO, resp., while EtCOMe and HCYCCH2OH were inert to the reaction conditions. These polymer-bound Rh, Pt, and Pb complexes also catalyzed oligomerization of PhCYCH in 5-14% yield.

Keywords

polymer bound transition metal catalyst
redn unsatd compd catalyst
phenylacetylene oligomerization polymer bound catalyst
ruthenium complex redn catalyst
rhodium complex redn catalyst
alkene redn complex metal catalyst

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Reduction catalysts
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29893-78-5, polymer-bound
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13938-94-8, polymer-bound
17185-29-4, polymer-bound
34076-51-2, polymer-bound
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14694-95-2, polymer-bound
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536-74-3
oligomerization of, polymer-bound transition-metal complex-catalyzed
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123-38-6, preparation
prepn. of, by redn. of acrolein with formic acid and/or sodium formate, catalytic
71-23-8, preparation
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123-72-8
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64-18-6, reactions
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107-02-8, reactions
107-18-6, reactions
108-05-4, reactions
111-34-2
592-76-7
4170-30-3
redn. of, polymer-bound transition-metal complex-catalyzed

106:108534
Catalytical properties of copper-containing heterogeneous metal complexes.
Belousov, V. M.; Kashuba, E. V.; Lyashenko, L. V. (Inst. Fiz. Khim., Kiev, USSR). Ukr. Khim. Zh. (Russ. Ed.), 52(10), 1032-6 (Russian) 1986. CODEN: UKZHAU. ISSN: 0041-6045. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
The catalysts were prepd. by photoredn.-deposition of Cu from protic solvents onto supports. The activity of these catalysts in isobutene oxidn. is discussed.

Keywords

oxidn catalyst copper hydrocarbon
photoredn copper deposition support

Index Entries

Oxidation catalysts
copper-contg. heterogeneous metal complex, on supports for hydrocarbons
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115:50387
Research on polymer-supported rare earth metal complexes. VII. Relation between the microstructure of polymer-supported metal complexes and their catalytic activity for butadiene polymerization.
Li, Yuliang; Yu, Guangqian; Wang, Shuzhi; Sun, Guirong (Changchun Inst. Appl. Chem., Acad. Sin., Changchun 130022, Peop. Rep. China). Cuihua Xuebao, 12(3), 245-8 (Chinese) 1991. CODEN: THHPD3. ISSN: 0253-9837. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 36
The sequence distribution of monomer units in acrylic acid (I)-styrene

(II) copolymer was calcd. The probability of the existence of long sequences of I or II increased with increasing content of the considered monomer in the copolymer. The activity of I-II copolymer-supported metal complexes is related to the distribution function of sequences of different lengths in the copolymer. When the distribution function of long sequence of I is higher, the activity of the complexes is low. The complex with nearly equal distribution function of long and short sequences of II shows higher activity. The microstructure of polybutadiene obtained using these I-II copolymer-supported metal complex catalysts only relates to the nature of the transition metal, and does not relate to the distribution of monomer units in the copolymer.

Keywords

acrylic acid styrene copolymer microstructure
catalyst supported polymn butadiene microstructure
polybutadiene copolymer supported catalyst microstructure

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Polymerization catalysts
acrylic acid-styrene copolymer-supported rare earth metal complexes, for butadiene, microstructure and catalytic activity in relation to
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7440-00-8, acrylic acid-styrene copolymer complexes
25085-34-1, iron and neodymium complexes
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prepn. of, in presence of acrylic acid-styrene copolymer-metal complex catalysts, microstructure and catalytic activity in relation to

113:114677
Preparation of platinum cluster catalysts supported on porous chelate resin-metal complexes for hydrogenation of olefins and dienes.
Toshima, Naoki; Teranishi, Toshiharu; Asanuma, Hiroyuki; Saito, Yasukazu (Fac. Eng., Univ. Tokyo, Tokyo 113, Japan). Chem. Lett., (5), 819-22 (English) 1990. CODEN: CMLTAG. ISSN: 0366-7022.
DOCUMENT TYPE: Journal CA Section: 24 (Alicyclic Compounds)
Section cross-reference(s): 67
Platinum cluster catalysts supported on chelate resin-metal complexes were prepd. by redn. of platinum ions immobilized on the supports which were characterized by high porosity. The initial rate of hydrogen uptake in the hydrogenation of olefin or diene over the catalysts increases with the surface area of the resin supports.

Keywords

platinum chelate resin metal catalyst
hydrogenation catalyst platinum cluster cycloalkene

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7429-90-5, chelate resin complex
7440-23-5, chelate resin complex
platinum cluster catalyst supported by
7439-95-4, chelate resin complex
9003-70-7, iminodiacetic acid-modified; aluminum, sodium and magnesium complexes
platinum cluster catalysts supported by

112:179935
Effect of mechanical activation of graphite on propylene polymerization in the presence of metal complex catalysts.
Nedorezova, P. M.; Tsvetkova, V. I.; Kolbanev, I. V.; D'yachkovskii, F. S. D. (Inst. Khim. Fiz., Moscow, USSR). Vysokomol. Soedin., Ser. A, 31(12), 2657-61 (Russian) 1989. CODEN: VYSAAF. ISSN: 0507-5475. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers)
In the polymn. of propylene in the presence of graphite-supported TiCl4-Et2AlCl catalyst, increasing the sp. surface of the graphite by milling led to increased catalyst efficiency and isotacticity of the polymer. Max. catalyst activity was obsd. when the milling was conducted in an inert atm. The max. catalyst activity with the highly dispersed graphite was 10.5 kg polymer/g Ti, with atactic fraction content being 1.2-2%. Use of the highly dispersed graphite also resulted in improved properties for the polymer, compared with those of the polymer obtained using natural graphite.

Keywords

polypropylene prepn graphite supported catalyst
Ziegler catalyst graphite supported
titanium polymn catalyst graphite supported
milling graphite support Ziegler catalyst

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96-10-6, uses and miscellaneous
catalysts, contg. titanium tetrachloride, graphite-supported, for propylene polymn., graphite mech. activation in relation to activity and stereospecificity of
9003-07-0
prepn. of, in presence of graphite-supported Ziegler catalyst, effect of mech. activation of graphite on activity and stereospecificity in
7782-42-5, uses and miscellaneous
support, for Ziegler catalyst for propylene polymn., catalyst activity and stereospecificity in relation to mech. activation of

111:154426
Poly(vinyl chloride)-bound dimethylglyoxime complexes of cobalt(II), nickel(II) and copper(II) as polymerization catalysts.
Moitra, Subrata; Biswas, Mukul; Uryu, Toshiyuki (Dep. Chem., Indian Inst. Technol., Kharagpur 721 302, India). Polym. Commun., 30(7), 225-8 (English) 1989. CODEN: POCOEF. ISSN: 0263-6476.
DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 36
PVC-anchored dimethylglyoxime complexes of Co(II), Ni(II) and Cu(II) initiated the soln. polymn. of N-vinylcarbazole by a conventional cationic mechanism. 13C NMR spectroscopy was used to est. the microtacticity of poly(N-vinylcarbazole) (I) produced by these catalysts. The microtacticity induced by Co(II), Ni(II) and Cu(II) complexes was more similar to isotactic I produced by BF3OEt2 than to atactic I obtained by free radical initiation.

Keywords

PVC supported polymn catalyst
methylglyoxime complex polymn catalyst
vinylcarbazole polymn mechanism
polyvinylcarbazole microtacticity
cobalt dimethylglyoxime complex catalyst polymn
nickel dimethylglyoxime complex catalyst polymn
copper dimethylglyoxime complex catalyst polymn

Index Entries

Polymerization catalysts
PVC-supported dimethylglyoxime complexes, for vinylcarbazole
Polymer-supported reagents
dimethylglyoxime complexes, catalysts, for polymn. of vinylcarbazole
Tacticity
of poly(vinylcarbazole), prepd. in presence of PVC-supported dimethylglyoxime complex catalysts
Polymerization
of vinylcarbazole, mechanism of, in presence of PVC-supported dimethyloxime complexes
3252-99-1
13478-93-8
14221-10-4
PVC-supported, catalysts, for polymn. of vinylcarbazole
1484-13-5
polymn. of, mechanism of, in presence of PVC-supported dimethylglyoxime complex catalysts
25067-59-8

prepn. of, PVC-supported dimethylglyoxime complex catalysts for
9002-86-2
supports, for dimethylglyoxime metal complex catalysts for
polymn. of vinylcarbazole

109:38985
Polymer-supported metal complex oxidation catalysts.
Sherrington, David C. (Dep. Pure Appl. Chem., Univ. Strathclyde,
Glasgow G1 1XL, UK). Pure Appl. Chem., 60(3), 401-14 (English)
1988. CODEN: PACHAS. ISSN: 0033-4545. DOCUMENT TYPE:
Journal; General Review CA Section: 38 (Plastics Fabrication and
Uses) Section cross-reference(s): 67
Recent developments involving polymer-supported metal complexes as
catalysts in oxidn. reactions, using dioxygen, H2O2, alkyl
hydroperoxides, hypochlorite anion and iodosobenzene as oxidants
are reviewed with 69 refs. Supported metallo-porphyrins are described
for the reversible binding of dioxygen, and in catalysis, along with the
structurally closely related metallo-phthalocyanines. Dialkylphenol
oxidative polymn. catalyzed by polymer-supported Cu2+ complexes is
reviewed along with more recent developments of supported Pd2+
Wacker-type catalysts. Novel Nafion-supported Rh3+, Cr3+, and Ce4+
complexes are described and their potentials for application in hostile
chem. environments are emphasized. Alkene epoxidns. using
tert-BuOOH catalyzed by polymer-supported V5+ and Mo6+ species are
dealt with in some detail because of the industrial potential of these
systems, and the recent advances reported in the literature. Finally
polymer-supported As, Se, and Te catalysts are described. Though not
strictly metal complexes, these are very closely related to metal
complex catalyzed H2O2 oxidns.

Keywords

review polymer supported oxidn catalyst
metal catalyst polymer supported review

Index Entries

Polymer-supported reagents
catalysts, metal complexes, for oxidn. reactions
Oxidation catalysts
metal complexes, polymer-supported
Porphyrins
metal complexes, catalysts, polymer-supported, for oxidn.
reactions
7439-98-7, uses and miscellaneous
7440-05-3, uses and miscellaneous
7440-16-6, uses and miscellaneous
7440-38-2, uses and miscellaneous
7440-45-1, uses and miscellaneous
7440-47-3, uses and miscellaneous
7440-50-8, uses and miscellaneous
7440-62-2, uses and miscellaneous
7782-49-2, uses and miscellaneous
13494-80-9, uses and miscellaneous
catalysts, polymer-supported, for oxidn. reaction
574-93-6, metal complexes
catalysts, polymer-supported, for oxidn. reactions

107:79052
Ultrathin membranes from a polymer-supported phthalocyanine-metal
complex.

Imoto, Tomosaku; Kato, Kazumasa; Shirai, Hiroyoshi (NOK Corp., Japan). Jpn. Kokai Tokkyo Koho JP 62013412 A2 22 Jan 1987 Showa, 6 pp. (Japan) CODEN: JKXXAF. CLASS: ICM: C08F212-08. ICS: B01D013-04; B05D001-20; C08F008-42; C08J005-18. APPLICATION: JP 85-152284 12 Jul 1985. DOCUMENT TYPE: Patent CA Section: 38 (Plastics Fabrication and Uses) Section cross-reference(s): 52, 72

Ultrathin membranes, suitable for use in various sensors and secondary cell electrodes, are prepd. using a phthalocyanine-metal complex covalently bonded polymer in a water-insol. solvent. Thus, styrene-vinylpyridine copolymer 2, 4,4',4'',4'''-tetrachlorocarbonylphthalocyanine-iron complex 1, and AlCl3 1 g were stirred in nitrobenzene for 3 h to give a phthalocyanine-iron complex covalently bonded polymer, 17 mg of which in 70 mL CHCl3 and 30 mL C6H6 was applied to a water surface to provide a film via the Langmuir-Blodgett method.

Keywords

sensor membrane phthalocyanine iron complex
electrode membrane phthalocyanine iron complex
styrene vinylpyridine polymer phthalocyanine membrane
ultrathin membrane phthalocyanine polymer

Index Entries

Membranes
Langmuir-Blodgett, ultrathin, styrene-vinylpyridine polymers covalently bonded to phthalocyanine-iron complex
Acylation
of styrene-vinylpyridine polymers, with tetrakis(chlorocarbonyl)phthalocyanine-iron complex
Hydrolysis
of tetracarboxamidophthalocyanine-iron complex
Electrodes
polymer-supported phthalocyanine-metal complex ultrathin membrane for use in, for secondary cells
Polymer-supported reagents
styrene-vinylpyridine polymer-bonded to phthalocyanine-metal complexes, for ultrathin membranes
Electrodes
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73545-39-8
manuf. and hydrolysis of
9019-70-9, reaction products with tetrakis(chlorocarbonyl)phthalocyanine-iron reaction complex and aluminum chloride
73533-43-4, reaction products with styrene-vinylpyridine copolymer and aluminum chloride
membranes, ultrathin
57-13-6, reactions
reaction of, with trimellitic anhydride and iron chloride
7705-08-0, reactions
reaction of, with trimellitic anhydride and urea
552-30-7
reaction of, with urea and iron chloride

108:74565
Oxidation of light hydrocarbons on bulk-phase and metal-complex heterogeneous catalysts in non-steady-state conditions.
Belousov, V. M.; Kashuba, E. V.; Lyashenko, L. V. (Inst. Fiz. Khim., Kiev, USSR). Katal. Katal., 24, 35-44 (Russian) 1986. CODEN:

KAKAAQ. ISSN: 0453-3585. DOCUMENT TYPE: Journal CA
Section: 22 (Physical Organic Chemistry) Section cross-reference(s):
45
The influence of catalyst prepn. method on activity and selectivity was examd. for some V, Cu, Mo, or W complexes grafted or deposited on oxide supports. The reactions studied were propene, isobutene, or butane oxidn. Operation of the catalysts under non-steady-state conditions allows use of more active components.

Keywords

oxidn catalyst hydrocarbon metal complex
nonsteady state oxidn catalyst operation

Index Entries

Hydrocarbons, reactions
oxidn. of, on transition metal complex-support catalyst under nonsteady state conditions
Oxidation catalysts
transition metal complexex, on oxide supports, for hydrocarbons
Transition metals, compounds
complexes, catalyst, oxidn. of light hydrocarbons on supported, under nonsteady state conditions
7439-96-5, complexes
7440-33-7, complexes
7440-50-8, complexes
7440-62-2, complexes
catalyst from oxide support and, for oxidn. of light hydrocarbons
106-97-8, reactions
115-07-1, reactions
115-11-7, reactions
oxidn. of, on transition metal complex-support catalyst under nonsteady state conditions

108:63286
Di- and poly-nuclear transition metal complexes as catalysts for the metal carbonyl substitution reaction. The role of supported metals and metal oxides as catalyst promoters.
Albers, Michel O.; Coville, Neil J.; Singleton, Eric (Dep. Chem., Univ. Witwatersrand, Johannesburg 2001, S. Afr.). J. Organomet. Chem., 326(2), 229-46 (English) 1987. CODEN: JORCAI. ISSN: 0022-328X. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Varius di- and polynuclear transition metal complexes were investigated as catalysts for the metal carbonyl substitution reaction. The complexes [{(h5-C5H4R)Fe(CO)2}2] (R = H, Me, CO2Me, OMe, O(CH2)4OH) and [(h5-C5H5) Ru(CO)2]2 are active catalysts for a range of substitution reactions including the probe reaction Fe(CO)4(CNtert-Bu) + tertBuNC®Fe(CO)3(CN-tert-Bu)2 + CO. [(h5-C5Me5)Fe(CO)2]2 is catalytically active only on irradn. with visible light. For [h5-C5H5)Fe(CO)2]2 and a range of isocyanides RNC (R = tert-Bu, C6H5CH2, 2,6-Me2C6H3), catalyst modification by substitution with isocyanide is a major factor influencing the degree of the catalytic effects obsd., e.g. [(h5-C5H5)Fe(CO)(CN)Bu)]2 is 35 times active as (h5-C5H5)2 probe reaction. Transition metal complexes which also catalyze the substitution of CO by isocyanide in [Fe-(CO)4(CNR)M(CO)6(M = Cr, M, W), Mn2(CO)10Re2(CO)10 include Ru3(CO)12 H4Ru4(CO)12, M4(CO)12 (M = Co, Ir), and Co2(CO)8. PtO2, PdO, and Pd/C act as promoters for the homogeneous di- and polynuclear transition metal catalysts, and can even be used to induce activity in normally inactive dimer and cluster complexes.

Keywords

catalyst transition metal complex

Index Entries

Transition metal carbonyls
catalysts, for metal carbonyl substitution reactions
Substitution reaction catalysts
polynuclear transition metal complexes, for transition metal carbonyls, effect of supported metals and metal oxide on metals of
Cluster compounds, coordinative
transition metal carbonyl complexes, catalyst, for metal carbonyl substitution reactions
Kinetics of substitution reaction
coordinative, of metal carbonyls, catalyzed by polynuclear transition metal complexes
10170-69-1
10210-68-1
12132-87-5
12154-95-9
14285-68-8
15243-33-1
15696-40-9
17786-31-1
18827-81-1
32028-30-1
34438-91-0
37017-55-3
37017-56-4
37017-57-5
37017-63-3
37584-08-0
42401-88-7
42401-89-8
42401-92-3
42401-95-6
51567-87-4
83288-07-7
84394-02-5
85881-80-7
112501-96-9
112501-97-0
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7440-05-3, uses and miscellaneous
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471-34-1, uses and miscellaneous
7440-44-0, uses and miscellaneous
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1314-08-5
1314-15-4
promoter, for polynuclear transition metal complex catalyst, for metal carbonyl substitution reactions

109:5860
Supported metal complex catalysts.
Hartley, Frank R. (R. Mil. Coll. Sci., Swindon/Wiltshire SN6 8LA, UK).
Chem. Met.-Carbon Bond, Volume 4, 1163-225. Edited by: Hartley,

Frank R. Wiley: Chichester, UK. (English) 1987. CODEN: 54GIAB.
DOCUMENT TYPE: Conference; General Review CA Section: 22
(Physical Organic Chemistry)
A review with 479 refs. Included in the discussion were both org. polymer supports and inorg. supports.

Keywords

review supported metal catalyst

Index Entries

Polymer-supported reagents
metal complex catalysts
Catalysts and Catalysis
metal, supported

108:149746
Liquid phase oxidation of ethylbenzene in the presence of metal-polymer complex catalysts with specially prearranged structures of active centers.
Efendiev, A. A.; Orudzhev, D. D.; Shakhtakhtinskii, T. N.; Kabanov, V. A. (Inst. Theor. Probl. Chem. Technol., Baku 370143, USSR).
Homogeneous Heterog. Catal., Proc. Int. Symp. Relat. Homogeneous Heterog. Catal., 5th, 717-25. Edited by: Ermakov, Yu. I.; Likholobov, V. A. VNU Sci. Press: Utrecht, Neth. (English) 1986. CODEN: 56DTA9.
DOCUMENT TYPE: Conference CA Section: 22 (Physical Organic Chemistry)
Complexes of cobalt with a copolymer of di-Et ester of vinylphosphonic acid and acrylic acid specially prearranged for ethylbenzene and a-phenylethyl hydroperoxide were obtained. The prearrangement consists of formation of the complexes in the presence of the mentioned hydrocarbon substrate, subsequent fixation of the formed structure by intermol. crosslinking and removal of the template substrate from the crosslinked complexes. Prearrangement resulted in a considerable increase in activity and selectivity of the catalysts of liq. phase oxidn. of ethylbenzene.

Keywords

oxidn ethylbenzene metal polymer catalyst
prearranged metal complex polymer catalyst

Index Entries

Oxidation, aut-
of ethylbenzene over prearranged polymer supported cobaltous complexes, mechanism of
Polymer-supported reagents
prearranged cobaltous complexes, autoxidn. catalysts for ethylbenzene or phenylethyl hydroperoxide, kinetics and mechanism with
Kinetics of oxidation
aut-, of ethylbenzene or phenethyl hydroperoxide over prearranged polymer supported cobaltous complexes
Oxidation catalysts
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7646-79-9, uses and miscellaneous

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98-86-2, preparation
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7440-48-4, acrylic acid-diethyl vinylphosphonic acid copolymer
complexes
51936-44-8, cobalt complexes
prearranged catalysts, for autoxidn. of ethylbenzene or phenylethyl
hydroperoxide, kinetics and mechanism with

109:212135
Carboxyphthalocyanine-metal complex poly(vinyl butyral) esters.
Fujioka, Takayasu; Kato, Kazumasa; Imoto, Tomosaku (NOK Corp.,
Japan). Jpn. Kokai Tokkyo Koho JP 63159406 A2 2 Jul 1988 Showa,
6 pp. (Japan) CODEN: JKXXAF. CLASS: ICM: C08F008-42. ICS:
C08F016-38. APPLICATION: JP 86-307170 23 Dec 1986.
DOCUMENT TYPE: Patent CA Section: 38 (Plastics Fabrication and
Uses) Section cross-reference(s): 41
Alc. group-contg. poly(vinyl butyral) in
4,4',4'',4'''-tetracarboxyphthalocyanine metal complexes are esterified
and used to prep. porous membranes and hollow fibers. Thus,
4,4',4'',4'''-tetracarboxyferrocyanine-iron complex in poly(vinyl butyral)
[contg. 0.75:0.22:0.03 (molar ratio) vinyl butyral groups-vinyl alc.
groups-vinyl acetate groups] were esterified in DMF contg.
dicyclohexylcarbodiimine.

Keywords

hollow fiber phthalocyanine polyvinyl butyral
porous membrane phthalocyanine polyvinyl butyral
carboxyphthalocyanine polyvinyl butyral ester

Index Entries

Synthetic fibers, polymeric
hollow, tetracarboxyphthalocyanine cobalt complex-poly(vinyl
butyral) esters for
Esterification
of tetracarboxyphthalocyanine metal complexes with poly(vinyl
butyral)
Membranes
tetracarboxyphthalocyanine metal complex poly(vinyl butyral)
esters for
Polymer-supported reagents
tetracarboxyphthalocyanine metal complex poly(vinyl butyral)
esters, membranes, prepn. of
Vinyl acetal polymers
butyrals, esterification of, with tetracarboxyphthalocyanine metal
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73545-39-8
manuf. and hydrolysis of
69934-86-7
73533-56-9
prepn. and esterification of, with poly(vinyl butyral)
57-13-6, reactions
reaction of, with trimellitic anhydride and ferric chloride
7705-08-0, reactions
reaction of, with trimellitic anhydride and urea
552-30-7

reaction of, with urea and ferric chloride
1332-82-7
reaction of, with urea and trimellitic anhydride

109:189604
Polynuclear metal complexes as model mixed oxide catalysts: isomerization activity.
Beckler, Robert K.; White, Mark G. (Sch. Chem. Eng., Georgia Inst. Technol., Atlanta, GA 30332-0100, USA). J. Catal., 110(2), 364-74 (English) 1988. CODEN: JCTLA5. ISSN: 0021-9517. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
Supported polynuclear Cu(II)-M(III) complexes (M = Al, Cr, Fe) were characterized for isomerization activity using cyclopropane (CP) and methylcyclopropane (MCP) as probe reactions. The objective of this study was to investigate the ligand effect on catalyst reactivity and selectivity when changing M. For the disappearance of CP, the iron complex showed 25 times the activity of the aluminum complex; the chromium complex was 20 times as active as the aluminum complex. The relative reactivities of the complex toward the MCP reaction were Al/Cr/Fe = 1/19/22. The isomers 1-butene/trans-2-butene/cis-2-butene were produced in the proportions 0.28/0.43/0.29, independent of overall conversion. Selectivity of the MCP reaction was not a function of M. The activity data are convincing evidence of a ligand effect for M upon its neighbors in these well-characterized complexes. In addn., the activities of these complexes are compared with those of silica and silica-alumina.

Keywords

polynuclear copper complex isomerization catalyst
cyclopropane isomerization polynuclear copper complex
ligand effect polynuclear isomerization catalyst

Index Entries

Catalysts and Catalysis
mixed oxide, polynuclear copper complexes as models for
Chemisorption
of ammonia on mixed oxide catalysts and their models
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of cyclopropane and methylpropane over polynuclear copper complexes
Isomerization
of cyclopropane or methylcyclopropane over supported polynuclear copper complexes, mechanism of
Isomerization catalysts
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7631-86-9, uses and miscellaneous
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1344-28-1, uses and miscellaneous
catalysts from silica and, for isomerization of cyclopropane and methylcyclopropane
106219-77-6
110486-30-1
110486-31-2
catalysts, for isomerization of cyclopropane and methylcyclopropane
7664-41-7, reactions
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107-80-2

conversion of, to methylcyclopropane
74-85-1, uses and miscellaneous
inhibition by, of isomerization of cyclopropane and methylcyclopropane over supported metal complex catalysts
624-64-6
106-98-9, uses and miscellaneous
115-07-1, uses and miscellaneous
590-18-1
inhibition by, of isomerization of cyclopropane or methylcyclopropane over supported metal complex catalysts
75-19-4
594-11-6
isomerization of, kinetics and mechanism of catalytic

107:154800
Synthetic polymers in design of metal-complex catalytic systems.
Kabanov, V. A.; Smetanyuk, V. I. (Inst. Petrochem. Synth., Moscow, USSR). Homogeneous Heterog. Catal., Proc. Int. Symp. Relat. Homogeneous Heterog. Catal., 5th, 301-25. Edited by: Ermakov, Yu. I.; Likholobov, V. A. VNU Sci. Press: Utrecht, Neth. (English) 1986. CODEN: 56DTA9. DOCUMENT TYPE: Conference CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
General principles of design, morphol., and methods of synthesis of the gel-immobilized catalytic systems were considered. Basic properties and peculiarities of the behavior of these catalysts related to their sp. mosaic structure were discussed using catalytic reactions of olefin dimerization and ethylene polymn. as examples.

Keywords

gel immobilized catalyst polymn dimerization
ethylene polymn catalyst polymer support
olefin dimerization catalyst polymer support

Index Entries

Polymer-supported reagents
catalysts
Alkenes, polymers
dimers, prepn. of, polymer-supported catalysts for
Polymer morphology
of gel-immobilized catalyst systems
Dimers
of olefins, prepn. of, polymer-supported catalysts for
Dimerization catalysts
Polymerization catalysts
polymer-supported
9002-88-4
prepn. of, polymer-supported catalysts for

107:154769
Structure and reactivity of heterogenized metal complex catalytic systems.
Dyachkovskii, F. S.; Pomogailo, A. D. (Inst. Chem. Phys., Chernogolovka 142432, USSR). Homogeneous Heterog. Catal., Proc. Int. Symp. Relat. Homogeneous Heterog. Catal., 5th, 447-70. Edited by: Ermakov, Yu. I.; Likholobov, V. A. VNU Sci. Press: Utrecht, Neth. (English) 1986. CODEN: 56DTA9. DOCUMENT TYPE: Conference; General Review CA Section: 35 (Chemistry of Synthetic High

Polymers)
A review with 27 refs. The distribution of ions of the anchored metal or polymer support, the cooperative character in such systems, and peculiarities of immobilization of heterocomplexes were discussed and these effects were considered in ethylene polymn. The stability and the high activity of immobilized catalytic systems were mainly due to a sharp inhibition of consistent processes in the coordination sphere of a transition metal.

Keywords

review polymer supported metal catalyst
ethylene polymn catalyst review

Index Entries

Polymer-supported reagents
transition metal compds., catalysts, for polymn. of ethylene, structure and catalytic activity in relation to
Polymerization catalysts
transition metal compds., polymer-supported, for ethylene, structure and catalytic activity in relation to
Transition metals, compounds
compds., catalysts, polymer-supported, for polymn. of ethylene, structure and catalytic activity in relation to
9002-88-4
prepn. of, catalysts for, polymer-supported, structure and catalytic activity in relation to

106:214411
Study of achievements in the use of radiation polymerization for immobilization of enzymes and heterogenization of homogeneous complexes of metals.
Garnett, J. L.; Jankiewicz, S. V.; Levot, R.; Long, M. A.; Sangster, D. F. (Univ. New South Wales, Kensington 2033, Australia). Mezhdunar. Simp. Svyazi Gomogennym Geterog. Katal., 5th, Volume 2, Issue 1, 60-83. Edited by: Ermakov, Yu. I.; Likholobov, V. A. Akad. Nauk SSSR, Sib. Otd., Inst. Katal.: Novosibirsk, USSR. (Russian) 1986.
CODEN: 55TGA9. DOCUMENT TYPE: Conference; General Review
CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 7, 38, 67
A review with 20 refs. on graft polymn. induced by UV or ionizing radiation to give supports for immobilization of enzymes and metal complex catalysts, with emphasis on the use of acids, inorg. salts, and polyfunctional monomers as additives to suppress side reactions during grafting.

Keywords

radiation graft polymn review
enzyme immobilization polymer support review
metal complex catalyst support review

Index Entries

Polymer-supported reagents
catalysts, graft polymn. in prepn. of
Enzymes
immobilization of, prepn. of radiation-grafted polymer supports for
Catalysts and Catalysis
metal complexes, prepn. of radiation-grafted polymer supports for
Polymers, preparation
graft, prepn. of, for supports for enzymes and metal complex

catalysts
Polymerization
graft, radiochem., for polymer supports, for immobilization of enzymes and metal complex catalysts, effect of additives on

106:198084
Silicone supported transition metal complex catalysts VIII. Synthesis and activity of poly(w-diphenylphosphinoalkylsiloxane) palladium complexes.
Chen, Yuanyin; Xiao, Chaobo; Luo, Chengyou; Liu, Jiwan (Dep. Chem., Wuhan Univ., Wuhan, Peop. Rep. China). Gaofenzi Tongxun, (5), 375-8 (Chinese) 1986. CODEN: KFTTAR. ISSN: 0453-2880.
DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Four poly(w-diphenylphosphinoalkylsiloxane), including poly(w-diphenylphosphinoundecyltrialkoxysilane), Pd complexes were prepd. They all displayed high activity for the hydrogenation of olefins and nitrobenzene [98-95-3]. The influence of the structure of monomers, the length of C chain from ligand to main chain, and the incorporation of non-complexable group on the activity and selectivity of these catalysts were discussed.

Keywords

siloxane supported palladium chloride catalyst
hydrogenation catalyst siloxane supported palladium
olefin hydrogenation catalyst siloxane palladium
nitrobenzene hydrogenation catalyst siloxane palladium
polydiphenylphosphinealkylsiloxane palladium hydrogenation catalyst

Index Entries

Polymer-supported reagents
catalysts, poly(diphenylphosphinoalkylsiloxane)-palladium chloride, for hydrogenation of olefins and nitrobenzene
Hydrogenation catalysts
poly(diphenylphosphinoalkylsiloxane)-palladium complexes
Siloxanes and Silicones, uses and miscellaneous
di-Ph, phosphorus-contg., as supports for palladium hydrogenation catalysts
64176-82-5
catalysts, poly(diphenylphosphinoalkylsiloxane)-supported, for hydrogenation of olefins and nitrobenzene
98-83-9, reactions
98-95-3, reactions
100-42-5, reactions
107-13-1, reactions
110-83-8, reactions
592-41-6, reactions
hydrogenation of, catalysts for, poly(diphenylphosphinoalkylsiloxane)-palladium complexes as
52090-19-4
108278-64-4
108278-65-5
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13340-46-0
hydrolytic polymn. of, with (diphenylphosphinoundecyl)trimethoxysilane, as supports for palladium hydrogenation catalysts

106:144689
Polymer metal complex catalyst.
Jiang, Yingyan (Inst. Chem., Acad. Sin., Beijing, Peop. Rep. China).
Kagaku, Zokan (Kyoto), (109), 257-65 (Japanese) 1986. CODEN:
KGZKA3. ISSN: 0368-5470. DOCUMENT TYPE: Journal; General
Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic
Reaction Mechanisms) Section cross-reference(s): 38
The prepn. and reactions of metal complex catalysts supported on org.,
organosilicon, or inorg. polymer are described. 44 Refs.

Keywords

review metal complex polymer catalyst

Index Entries

Polymers, uses and miscellaneous
catalysts from metal complexes and, prepn. of
Coordination compounds
catalysts, polymer-supported, prepn. of
Catalysts and Catalysis
metal complex-polymer, prepn. and reactions of

106:130520
Oxygen coordination systems of polymer metal complex.
Tsuchida, Eishun; Nishide, Hiroyuki (Sch. Sci. Eng., Waseda Univ.,
Tokyo 160, Japan). Kagaku (Kyoto), 41(8), 548-9 (Japanese) 1986.
CODEN: KAKYAU. ISSN: 0451-1964. DOCUMENT TYPE: Journal;
General Review CA Section: 78 (Inorganic Chemicals and Reactions)
A review with 15 refs. on polymer supported metal complexes as
oxygen transporters.

Keywords

review oxygen transport polymer metal complex

Index Entries

Polymers, uses and miscellaneous
oxygen transport by metal complexes supported on
Coordination compounds
oxygen transport by, supported on polymers
7782-44-7, reactions
transport of, using polymer supported metal complexes

106:87112
Polymer-protected metal complex for gas separation. III. Water
resistivity of polystyrene resin-supported aluminum copper(I)
chloride as a solid carbon monoxide adsorbent.
Hirai, Hidefumi; Hara, Susumu; Komiyama, Makoto (Fac. Eng., Univ.
Tokyo, Tokyo 113, Japan). Bull. Chem. Soc. Jpn., 60(1), 385-90
(English) 1987. CODEN: BCSJA8. ISSN: 0009-2673. DOCUMENT
TYPE: Journal CA Section: 49 (Industrial Inorganic Chemicals) Section
cross-reference(s): 48
Adsorbents for CO were prepd. from AlCl3, Cu2Cl2, and a
macroreticular-type polystyrene resin by use of various solvents, and
their resistivities against water and vapor were studied. The
absorption capacities of the adsorbents prepd. by use of CS2 and
CH2Cl2 remained virtually unchanged even after repeated (3-5 times)

contact of the adsorbents with N gas contg. 10 mol% water with respect to the charged Cu2Cl2 (water contents 5600 and 4600 ppm). The adsorbents obtained with the use of benzene and toluene as prepn. solvents, however, exhibited small but gradual decreases in their adsorption capacities on repeated contact with N gas contg. water. SEM and energy dispersive x-ray microanal. on the water-resistant adsorbents prepd. with the use of CS2 and CH2Cl2 showed that the active species for the adsorption, AlCuCl4, was uniformly distributed in the beads of the polystyrene resin without formation of aggregates. Almost all of the AlCuCl4 was located in the apolar microporosities of the polystyrene resin and was effectively protected from water vapor.

Keywords

carbon monoxide adsorbent
aluminum cuprous chloride adsorbent
polystyrene aluminum cuprous chloride

Index Entries

27803-79-8
adsorbent for carbon monoxide, polystyrene-supported, water resistivity of
630-08-0, uses and miscellaneous
adsorbent for, polystyrene-supported aluminum copper chloride, water resistivity of
9003-53-6
aluminum copper chloride supported by, for carbon monoxide adsorption, water resistivity of
7732-18-5, properties
resistance to, of polystyrene-supported aluminum copper chloride adsorbent for carbon monoxide

112:236036
Polymerization of olefins in the presence of supported transition metal catalysts and aluminoxanes.
Sugimoto, Ryuichi; Asanuma, Tadashi (Mitsui Toatsu Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 01259005 A2 16 Oct 1989 Heisei, 8 pp. (Japan) CODEN: JKXXAF. CLASS: ICM: C08F010-00. ICS: C08F004-64. APPLICATION: JP 88-87211 11 Apr 1988. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers)
Olefins are polymd. in the presence of aluminoxanes and supported transition metal catalysts obtained by treating metal oxides, complex oxides, or hydroxides with transition metal compds. Y1Y2Y3Si(CH2)nLMX1X2X3 (I; Y1 = halo, C1-8 oxyhydrocarbyl; Y2, Y3 = halo, C1-8 oxyhydrocarbyl, hydrocarbyl; M = transition metal; L = mono- or polycyclic hydrocarbyl coordinated to M; X1-3 = halo, C1-8 oxyhydrocarbyl, C1-8 hydrocarbyl; 1 of X1-3 may be mono- or polycyclic hydrocarbyl; n = 1-9). Thus, polymn. of ethylene in n-heptane in the presence of 1 g reaction product of (3-trimethoxysilylpropylindenyl)zirconium trichloride and SiO2 contg. 0.1 mmol Zr/g and 1.1 g Me aluminoxane at 80° and 5 kg/cm2 gauge gave polymers at catalyst efficiency 2.0 ´ 10 5 g/mol Zr-h without polymer deposits on the reactor wall.

Keywords

olefin polymn catalyst
transition metal supported polymn catalyst
aluminoxane olefin polymn catalyst

Index Entries

Polymerization catalysts
transition metal complex-silica reaction products and
aluminoxanes, for olefins
Aluminoxanes
Me, catalysts, with transition metal complex-silica reaction
products, for polymn. of olefins
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polymers, manuf. of, catalysts for
7631-86-9, reaction products with transition metal complexes
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9002-88-4
manuf. of, catalysts for
126202-24-2
prepn. and reaction of, with zirconium tetrachloride
110276-18-1, reaction products with silica
126155-73-5, reaction products with silica
127328-31-8, reaction products with silica
prepn. of, catalysts, with aluminoxanes, for polymn. of olefins
95-13-6
reaction of, with 3-chloropropyltrimethoxysilane
2530-87-2
reaction of, with indene
10026-11-6
reaction of, with indenylpropyltrimethoxysilane

111:204015
Photocatalytic oxidation of isobutylene on grafted and supported
metal-complex catalysts.
Kashuba, E. V.; Lyashenko, L. V.; Belousov, V. M. (Inst. Fiz. Khim. im.
Pisarzhevskogo, Kiev, USSR). Kinet. Katal., 30(2), 474-7 (Russian)
1989. CODEN: KNKTA4. ISSN: 0453-8811. DOCUMENT TYPE:
Journal CA Section: 72 (Electrochemistry) Section cross-reference(s):
67
Dil. transition-metal-ion/SiO2 systems (0.1-0.4 mass % Pb, Mo W, Re)
displays photocatalytic activity for isobutylene oxidn. The photocatalytic
activity originated in energy absorption and transfer at individual
catalyst centers. The formation of Me2CO as the sole product of this
photocatalytic process is consistent with adsorption of the hydrocarbon
on photogenerated O-.

Keywords

photochem oxidn isobutylene transition metal
transition metal ion photooxidn isobutylene

Index Entries

Oxidation, photochemical
of isobutylene in presence of grafted and supported
transition-metal ions, mechanism of
Transition metals, uses and miscellaneous
ions, catalysts, for photochem. oxidn. of isobutylene
Oxidation catalysts
photochem., transition-metal ions, for isobutylene
7439-92-1, uses and miscellaneous
7439-98-7, uses and miscellaneous
7440-15-5, uses and miscellaneous
7440-33-7, uses and miscellaneous
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67-64-1, preparation
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115-11-7, reactions
photochem. oxidn. of, in presence of grafted and supported
transition-metal ions, mechanism of

111:121882
Supported Metal Complexes. New Generation of Catalysts
(Zakreplennye Metallokompleksy. Novoe Pokolenie Katalizatorov).
Hartley, F. R. (USSR). (Mir: Moscow, USSR), 358 p. rub 5.20.
Translated from: Eng (Russian) 1989. DOCUMENT TYPE: Book CA
Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction
Mechanisms)
Abstract Unavailable

Keywords

book supported metal complex catalyst

Index Entries

Coordination compounds
catalysts from supported
Catalysts and Catalysis
supported metal complexes

107:198977
Polymer-supported rare earth metal complexes.
Li, Yuliang; Pan, Hefeng; Li, Guangquan; Ouyang, Jun (Changchun Inst.
Appl. Chem., Acad. Sin., Changchun, Peop. Rep. China). Huaxue
Xuebao, 45(8), 801-4 (Chinese) 1987. CODEN: HHHPA4. ISSN:
0567-7351. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of
Synthetic High Polymers)
Styrene-2-(methylsulfinyl)ethyl methacrylate copolymer-supported MCl3
complexes, where M = La, Pr, Nd, Eu, Ho, Er, Tm, and Yb, were prepd.
and characterized by IR spectroscopy. The catalytic activity of the
polymer-supported NdCl3-(iso-Bu)3Al system towards stereospecific
polymn. of butadiene was 2-3 times higher than that of
NdCl3-(iso-Bu)3Al-DMSO system. The cis-1,4 content of polybutadiene
formed was >98%.

Keywords

rare earth metal polymer complex
styrene methacrylate copolymer metal complex
lanthanum styrene methacrylate copolymer complex
praseodymium styrene methacrylate copolymer complex
erbium styrene methacrylate copolymer complex
europium styrene methacrylate copolymer complex
holmium styrene methacrylate copolymer complex
thulium styrene methacrylate copolymer complex
ytterbium styrene methacrylate copolymer complex
neodymium aluminum butadiene polymn catalyst
polybutadiene prepn neodymium aluminum catalyst

Index Entries

Rare earth chlorides
polymer-supported, prepn. and characterization of
Polymer-supported reagents
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copolymer, prepn. and characterization of

Polymerization catalysts
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100-99-2, uses and miscellaneous
catalysts, contg. polymer-supported neodymium chloride, for
stereospecific polymn. of butadiene
39383-98-7, complexes with (methylsulfinyl)ethyl methacrylate-styrene
copolymer
catalysts, contg. triisobutylaluminum, for stereospecific polymn. of
butadiene
9003-17-2
of cis-1,4-configuration, prepn. of, catalysts for
10025-76-0, complexes with (methylsulfinyl)ethyl methacrylate-styrene
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10099-58-8, complexes with (methylsulfinyl)ethyl methacrylate-styrene
copolymer
10138-41-7, complexes with (methylsulfinyl)ethyl methacrylate-styrene
copolymer
10138-62-2, complexes with (methylsulfinyl)ethyl methacrylate-styrene
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10361-79-2, complexes with (methylsulfinyl)ethyl methacrylate-styrene
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13537-18-3, complexes with (methylsulfinyl)ethyl methacrylate-styrene
copolymer
13759-96-1, complexes with (methylsulfinyl)ethyl methacrylate-styrene
copolymer
108811-98-9, complexes with rare earth metals
prepn. and characterization of

107:58422
g-Radiation-produced supported metal complex catalysts. Part VII.
The influence of the solvent used during radiation grafting on the
catalytic properties of supported rhodium (I)-phosphine
hydroformylation catalysts.
Hartley, F. R.; Murray, S. G.; Sayer, A. T. (Chem. Syst. Group, R.
Military Coll. Sci., Wiltshire SN6 8LA, UK). J. Mol. Catal., 38(3),
295-308 (English) 1986. CODEN: JMCADS. ISSN: 0304-5102.
DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic
Chemistry)
A series of rhodium(I) hydroformylation catalysts were prepd. by
supporting the moiety Rh(acac)(CO) (acac = 2,4-pentanedionato) on a
4-CH2:CHC6H4PPh2 polypropylene copolymer. The supports were
prepd. by g-radiation grafting the unsatd. phosphine onto polypropylene
in both THF and Me2SO as solvents. The effectiveness of Me2SO as a
grafting solvent was shown, by comparison with its effectiveness when
grafting 4-vinylpyridine, to be due to the low soly. of the phosphine in
Me2SO. This results in preferential concn. of 4-CH2:CHC6H4PPh2
within the polypropylene matrix. The optimum grafting conditions were
detd. The max. total does should not exceed 3 Mrad; for Me2SO the
dose rate should not exceed 100 krad h-1, whereas in THF the dose
rate should be as high as possible and at least 400 krad h-1. When
rhodium(I) is introduced onto the polymers by equilibration with
[Rh(acac)(CO)2](acac = 2,4-pentanedionato), polymers with low
phosphine contents complex proportionally more rhodium, giving low
phosphorus:rhodium contents, probably due to the relatively few
phosphine groups present being near the surface of the polymer.
During the hydroformylation of 1-hexene, the supported catalysts all
showed increasing selectivity for normal as opposed to branched
aldehyde formation with increasing phosphorus:rhodium ratio. The
supports prepd. from material grafted in THF showed particularly good
selectivities. Most of the supported catalysts promoted some 1-hexene
isomerization although two, one prepd. by grafting in Me2SO and
another in THF, gave very high specificities for hydroformylation as
opposed to isomerization. The present work confirms the importance

of the intimate detailed structure of the active site and its environment in detg. the catalytic performance of a supported metal complex. A method of anal. for phosphorus in phosphinated polymer-supported rhodium complexes based on at. absorption spectroscopy is described. Although rhodium does not interfere, platinum and palladium do, so that the method cannot be applied when these elements are present.

Keywords

solvent effect styryldiphenylphosphine grafting polypropylene
radiation grafting styryldiphenylphosphine polypropylene
rhodium phosphine hydroformylation catalyst

Index Entries

Solvent effect
on radiation-induced grafting reaction of styryldiphenylphosphine with polypropylene
Hydroformylation catalysts
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54604-30-7, phosphonated polypropylene-supported catalyst, for hydroformylation and isomerization of hexane
603-35-0, analysis
14694-95-2
14973-90-1
17185-29-4
83018-40-0
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14977-08-3
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15076-72-9
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10199-34-5
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40538-11-2
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9003-07-0
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592-41-6, reactions
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111-71-7
925-54-2
prepn. of, by rhodium-catalyzed hydroformylation of hexene
4050-45-7
7688-21-3
prepn. of, by rhodium-catalyzed isomerization of hexene
14874-82-9
reaction of, with phosphonated polypropylene, hydroformylation catalyst from

114:198461
Synthesis and characterization of vanadium-containing silsesquioxanes.
Feher, Frank J.; Walzer, John F. (Dep. Chem., Univ. California, Irvine, CA 92717, USA). Inorg. Chem., 30(8), 1689-94 (English) 1991.
CODEN: INOCAJ. ISSN: 0020-1669. DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions) Section

cross-reference(s): 29, 75
The reactions of [(c-C6H11)7(Si7O9)(OH)3] with VOCl3, (PrO)3VO, or [Me3SiCH2)3VO afford equil. mixts. of [(c-C6H11)7(Si7O12)VO] (I) and [(c-C6H11)7(Si7O12)VO]2 (II). Equil. mixts. of I and II are also obtained from the reactions of [(c-C6H11)7(Si7O12)VPy and [(c-C6H11)7(Si7O12(V(CH3CN)]2 with O2. The DH° and DS° for the dimerization of I to II are -25.2 ± 1.1 kJ/mol and -72 ± 1 J/(K mol), resp. 51V NMR data and comparisons of metrical data for II with that obtained from a single-crystal x-ray diffraction study of (Ph3SiO)3VO (II) suggest that the instability of I relative to II results from poorer P-bonding between between the V ion and the silsesquioxane framework. The implications of these results on both the chem. of silica-supported V complexes and the utility of polyhedral oligometalasilsesquioxanes as models for silica-supported metal complexes are discussed. II.CH2Cl2 crystallizes as orthorhombic, space group Pbcn, Z = 4, R = 0.114, Rw = o.116. III.C6H6 crystallizes as triclinic, space group P1, Z = 2, R = 0.0552, Rw = 0.0572.

Keywords

crystal structure vanadium contg silsesquioxane
dimerization heat entropy vanadium contg silsesquioxane
silica supported metal complex model

Index Entries

Entropy
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Heat of dimerization
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Dimerization
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Crystal structure
Molecular structure
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Silsesquioxanes
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31011-82-2
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133348-40-0
crystal structure of
126541-19-3
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133348-38-6
133348-39-7
prepn. and crystal structure of
133323-69-0
prepn. and dimerization and potential modeling by, of silica-supported metal complexes
133348-37-5
prepn. and magnetic susceptibility and oxidn. of
20538-61-8
reaction of, with trisilanol in presence of triethylamine with subsequent substitution reaction with acetonitrile

114:82033
Substituted metal carbonyls - XIV. Polynuclear heterometallic complexes of chromium, molybdenum, tungsten and manganese supported by singly-bridging 1,1'-bis(diphenylphosphino)ferrocene.

Hor, T. S. A.; Phang, L. T. (Fac. Sci., Natl. Univ. Singapore, Singapore 0511, Singapore). Polyhedron, 9(18), 2305-8 (English) 1990.
CODEN: PLYHDE. ISSN: 0277-5387. DOCUMENT TYPE: Journal
CA Section: 29 (Organometallic and Organometalloidal Compounds)
A series of polynuclear heterometallic complexes (OC)5M(m-dppf)M'(CO)5(M, M' = Cr, Mo, W; M ¹ M') and (OC)5M(m-dppf)Mn2(CO)9 [dppf = 1,1'-bis(diphenylphosphino)ferrocene] has been synthesized at room temp. based on the metalloligand M(CO)5(h1-dppf). The use of amine oxide as a decarbonylant preserves the integrity of the Mn-Mn bond. The mixed metals are linked by a singly-bridging diphosphine group which does not perturb the two metal spheres.

Keywords

bisphosphinoferrocene bridge polynuclear heterometallic complex
manganese polynuclear heterometallic bisphosphinoferrocene bridge
molybdenum polynuclear heterometallic bisphosphinoferrocene bridge
tungsten polynuclear heterometallic bisphosphinoferrocene bridge
chromium polynuclear heterometallic bisphosphinoferrocene bridge

Index Entries

Substitution reaction, coordinative
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131821-11-9
131821-12-0
131821-13-1
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10170-69-1
13007-92-6
13939-06-5
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14040-11-0
reaction of, with bisphosphinoferrocene metal complex, polynuclearheterometallic complex from
1184-78-7
reaction of, with metal carbonyls and bisphosphinoferrocene metal complexes, polynuclear heterometallic complexes from
114093-73-1
126056-31-3
126056-33-5
reaction of, with metal carbonyls, polynuclear heterometallic complexes from

113:154719
Heterogenized transition metal halides in the synthesis of highly dispersed metal and metal-complex catalysts. VII. Catalysts based on fixed transition metal halides in liquid-phase oxidation of hydrocarbons.
Yuffa, A. Ya.; Matsenko, G. P.; Berentsveig, V. V. (Tyumen. Gos. Univ., Tyumen, USSR). Kinet. Katal., 31(3), 614-18 (Russian) 1990.
CODEN: KNKTA4. ISSN: 0453-8811. DOCUMENT TYPE: Journal
CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 23, 67
Oxidn. of cumene (I) and cyclohexene at 65-95° in the presence of CoCl2, MnCl2, CuCl2, and NiCl2 on Li-modified silica supports was affected by the isletlike distribution of the active catalyst component. In

the presence of Co-, Mn-, and Ni-contg. catalysts, oxidn. of I occurred by aheterogeneous-homogeneous radical-chain mechanism, whereas in the case of a Cu-contg. catalyst the reaction proceeded at the surface of heterogeneous catalyst. The limiting stages of I oxidn. in the presence of the catalysts were detd. based on kinetic data.

Keywords

transition metal hydrocarbon oxidn catalyst
cumene oxidn catalyst transition metal
cyclohexene oxidn catalyst transition metal

Index Entries

Transition metal chlorides
catalysts, supported on lithium-modified silica, for liq.-phase oxidn. of hydrocarbons
Oxidation catalysts
liq.-phase, transition metal chlorides supported on lithium-modified silica, for hydrocarbons
7439-93-2, uses and miscellaneous
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7447-39-4, uses and miscellaneous
7646-79-9, uses and miscellaneous
7718-54-9, uses and miscellaneous
7773-01-5
catalysts, supported on lithium-modified silica, for liq.-phase oxidn. of hydrocarbons
98-82-8
110-83-8, reactions
oxidn. of, liq.-phase, transition metal catalysts on lithium-modified silica for

111:141458
A simple method for the determination of dispersion of metal complexes on the alumina support.
Gokak, D. T.; Shah, J. N.; Ram, R. N. (Fac. Sci., MS Univ., Baroda 390 002, India). Indian J. Chem., Sect. A, 28A(6), 505-7 (English) 1989. CODEN: IJCADU. ISSN: 0376-4710. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 66
An NH3 pulse method was devised for the detn. of dispersion of metal ions and complexes on the surface of Al2O3 support. This method is based on the ease of formation of metal-NH3 complexes at low temps., rapid desorption of physisorbed NH3 at high temp. and its high soly. in H2O. The method was tested for Cu(II) and Co(II) ions and Cu(bipyridyl) and Cr(bipyridyl) complexes adsorbed on neutral Al2O3. The method is fairly accurate (0.5% deviation).

Keywords

ammonia pulse method metal dispersion alumina

Index Entries

Coordination compounds
dispersion of catalysts contg., ammonia pulse method for detn. of
Catalysts and Catalysis
metal complexes supported on alumina, detn. of dispersion of, by ammonia pulse method
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7664-41-7, properties
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dispersion detd. by
1344-28-1, uses and miscellaneous
catalyst support, metal complex dispersion on, ammonia pulse
method for detn. of

110:231731
Silicone-supported transition metal complex catalysts - synthesis of poly-w-diphenylphosphinoundecylsiloxane platinum complex and its catalytic activity for hydrosilylation and hydrogenation of unsaturated compounds.
Xiao, Chaobo; Lin, Yigeng; Luo, Chengyou; Tian, Zhenjiao; Chen, Yuanyin (Wuhan Univ., Wuhan, Peop. Rep. China). Wuhan Daxue Xuebao, Ziran Kexueban, (1), 81-6 (Chinese) 1988. CODEN: WTHPDI. ISSN: 0253-9888. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 23
A silica-supported poly-w-diphenylphosphinoundecylsiloxane platinum complex has been synthesized starting from w-chloroundecyltriethoxysilane via phosphination with LiPPh2 followed by hydrolysis and immobilization, and then treating the above compd. with H2PtCI6×6H2O. Their catalytic properties on hydrosilylation and hydrogenation of unsatd. compds. have been investigated. The addn. of trimethoxysilane to 1-hexene in the presence of complex catalyst yields 80-90% of hexyltrimethoxysilane. The rates of reaction have been measured and decreased in the order: hexene > styrene, dodecene, allyl glycidyl ether. The rate of hydrogenation of various substrates increased in the order: cyclohexene < styrene < vinyl acetate < dodecene < decene. The platinum complex could be easily recovered by filtration after each reaction and repeatedly used while maintaining the same activity.

Keywords

olefin hydrosilylation hydrogenation catalyst platinum complex phenylphosphinoundecylsiloxane platinum complex

Index Entries

Alkenes, reactions
hydrosilylation and hydrogenation of, catalysts for
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Hydrosilylation catalysts
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prepn. and reaction of, with silica
108278-64-4, reaction product with silica, platinum complexes
prepn. of, as hydrosilylation and hydrogenation catalyst
7440-06-4, compds. with silica-supported
diphenylphosphinoundecylsiloxane
prepn. of, as hydrosilylation and hydrogenation catalysts

110:76254
Polymeric Immobilized Metal-Complex Catalysts (Polimernye Immobilizovannye Metallokompleksnye Katalizatory).
Pomogailo, A. D. (USSR). (Nauka: Moscow, USSR), 302 pp. rub 4.20. (Russian) 1988. DOCUMENT TYPE: Book CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38, 67
Abstract Unavailable

Keywords

book complex catalyst polymer supported

Index Entries

Polymer-supported reagents
metal complexes, catalysts
Catalysts and Catalysis
metal complexes, polymer-supported

108:7826
Preparation of light olefin from syngas over a new catalyst - supported carbonyl complex.
Xu, Wenyang; Ma, Jinghong (Taiyuan Univ. Technol., Taiyuan, Peop. Rep. China). Taiyuan Gongye Daxue Xuebao, (3), 96-106 (Chinese) 1987. CODEN: TGDXEZ. DOCUMENT TYPE: Journal; General Review CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
A review with 11 refs. on carbonyl transition metal complex catalysts for prepn. of light olefins from synthesis gas.

Keywords

carbonyl transition metal catalyst review
synthesis gas conversion olefin review

Index Entries

Transition metal carbonyls
catalysts, for conversion of synthesis gas to olefins
Alkenes, preparation
prepn. of, from synthesis gas, carbonyl transition metal complex catalysts for
Catalysts and Catalysis
transition metal carbonyls, for conversion of synthesis gas to olefins
Fuel gases
synthesis gas, conversion of, to olefins, carbonyl transition metal complex catalysts for

114:172285
Metal-support bonds in supported metal catalysts.
Gates, B. C. (Cent. Catal. Sci. Technol., Univ. Delaware, Newark, DE,

USA). Report, DOE/ER/13790-3; Order No. DE91005004, 12 pp. Avail. NTIS From: Energy Res. Abstr. 1991, 16(2), Abstr. No. 4589 (English) 1990. DOCUMENT TYPE: Report CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 29
The synthesis, structure, and bonding of a family of metal complexes, clusters, and particles on the surfaces of high-area metal oxide supports were studied. The focus is the structure of the metal-support interface. Surface species were prepd. by synthetic organometallic chem. on the support surfaces. The organometallic precursors are complexes of W, Re, Os, Ir, and Pt; including W(CO)6, HRe(CO)5, Re2(CO)10, H3Re3(CO)12, H2Os(CO)4, Ir(h3-C3H5)3, and Pt(h3-C3H5)2. The supports are primarily MgO and g-Al2O3. The surface species were characterized by IR and EXAFS spectroscopies, among other techniques.

Keywords

transition metal complex oxide support catalyst
tungsten complex oxide support catalyst
rhenium complex oxide support catalyst
osmium complex oxide support catalyst
iridium complex oxide support catalyst
platinum complex oxide support catalyst

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Catalysts and Catalysis
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12240-88-9
14040-11-0
14285-68-8
22372-70-9
73463-62-4
catalysts from oxide supports and, metal-support interaction in
1309-48-4, uses and miscellaneous
catalysts from transition metal complexes and, metal-support interaction in

113:6946
Study of immobilized catalysts. XXIV. Catalysts resulting from graft polymerization of metal-containing monomers onto polyethylene.
Savost'yanov, V. S.; Pomogailo, A. D.; Ponomarev, A. N. (Inst. Energ. Probl. Khim. Fiz., Chernogolovka, USSR). Kinet. Katal., 30(6), 1414-20 (Russian) 1989. CODEN: KNKTA4. ISSN: 0453-8811.
DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38
Metal-contg. graft copolymers were obtained by graft polymn. of acrylic acid transition metal salts or acrylamide transition metal complexes onto polyethylene. The valence state, coordination, and ligand environment of the metal in the graft copolymer corresponded to that in the starting monomer. Graft polymn. occurred through only 1 of the available vinyl groups of the salts and complexes, and the graft chains contained unpolymd. vinyl groups. Graft copolymers contg. Ni(II) and Ti(IV) had significantly higher catalytic activity in the dimerization and polymn. of ethylene than analogous catalysts immobilized through chem. modification reactions of a polymer support.

Keywords

metal contg graft copolymer
polymn catalyst metal contg copolymer
dimerization catalyst metal contg copolymer
polyethylene acrylamide metal complex grafted
acrylate metal salt grafted polyethylene
ethylene polymn immobilized metal catalyst

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Transition metals, uses and miscellaneous
catalysts, polymer-supported, prepn. of, by graft polymn. of acrylic salts and complexes
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Dimerization catalysts
Polymerization catalysts
transition metals, immobilized, prepd. by graft polymn. of acrylic salts and complexes, for ethylene, activity of
111866-37-6
122159-82-4
122159-83-5
122159-84-6
122159-85-7
127602-32-8
127602-89-5
127602-90-8
prepn. and structure and catalytic activity of
9002-88-4
16482-32-9
prepn. of, transition metal-contg. acrylic graft copolymer as immobilized catalyst for

106:39140
Metal complex catalysts with organic dye ligands which are homogeneous and immobilized on supports.
Khidekel, M. L.; Bulatov, A. V.; Lobach, A. S.; Chepaikin, E. G. (USSR).
5 Mezhdunar. Simp. po Svyazi mezhdu Gomogen. i Geterogen. Katal., Novosibirsk, 15-19 Iyulya, 1986. Dokl., Novosibirsk, 2(Ch 2), 204-26
From: Ref. Zh., Khim. 1986, Abstr. No. 21B4272(Russian) 1986.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Title only translated.

Keywords

immobilized catalyst metal dye complex

Index Entries

Nitro compounds
Alkenes, reactions
hydrogenation of, metal dye complex catalysts for
Dyes
metal complexes, catalysts, homogeneous or supported
Exchange reaction catalysts
metal dye complexes, for hydrogen with water
Catalysts and Catalysis
Hydrogenation catalysts
metal dye complexes, homogeneous or supported
7732-18-5, reactions
exchange reaction of hydrogen with, metal dye complex catalysts

for
1333-74-0, reactions
exchange reaction of, with water, metal dye complex catalysts for

115:143554
Nonconventional catalysts for hydrogenation of unsaturated compounds based on Platinum Group metals with nitrogen-containing ligand complexes.
Frolov, V. M.; Parenago, O. P.; Shuikina, L. P.; Novikova, A. V.; Kliger, E. G.; Turisbekova, K. K. (Inst. Neftekhim. Sint. im. Topchieva, Moscow, USSR). Neftekhimiya, 31(2), 197-204 (Russian) 1991. CODEN: NEFTAH. ISSN: 0028-2421. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 21
The reactions of Pt-group metal compds. with higher aliph. amines can be used to synthesize highly active metal complex catalysts for hydrogenation of unsatd. hydrocarbons. Immobilization of homogeneous catalysts on the surfaces of oxide-type inorg. supports gives supported catalysts exhibiting stability of catalytic action, as well as stability toward poisoning or thermal treatment. The Pd complex catalysts exhibit high activity (>75,000 h-1) and high selectivity for hydrogenation of conjugated dienes or acetylenes to alkenes with yields approaching 98-100% (almost complete conversion). The Rh and Pt complex catalyst systems are active for hydrogenation of alkenes, dienes, and acetylenes to satd. hydrocarbons. The specific activities approach 30,000 mol g-atom-metal-1 h-1 at 20° and 0.1 MPaH2.

Keywords

hydrogenation catalyst platinum complex
palladium complex hydrogenation catalyst
rhodium complex hydrogenation catalyst
amine complex platinum metal catalyst
unsatd compd hydrogenation catalyst

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Platinum-group metal compounds
catalyst prepd. from, for hydrogenation of unsatd. compds.
Alkadienes
Alkynes
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Hydrogenation catalysts
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Platinum-group metal compounds
amine complexes, hydrogenation catalyst from
Amines, compounds
platinum-group metal complexes, hydrogenation catalyst from
7440-05-3, complexes
7440-06-4, complexes
7440-16-6, complexes
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7440-05-3, uses and miscellaneous
7440-06-4, uses and miscellaneous
7440-16-6, uses and miscellaneous
catalyst, oxide-supported, for hydrogenation of unsatd. compds.

115:72388
Polymer-metal complexes of amino and dithiocarbamate functions

supported on crosslinked polyacrylamides.
Mathew, Beena; Pillai, V. N. Rajasekharan (Sch. Chem. Sci., Mahatma Gandhi Univ., Kottayam 686 631, India). Polym. Sci., [Symp. Proc. Polym. '91], Volume 1, 422-8. Edited by: Sivaram, S. Tata McGraw-Hill: New Delhi, India. (English) 1991. CODEN: 57CFA3.
DOCUMENT TYPE: Conference CA Section: 35 (Chemistry of Synthetic High Polymers)
Crosslinked polyacrylamides of varying mol. character and extent of crosslinking were prepd. and functionalized with ethylenediamino and dithiocarbamate groups. Complexation of these ligands which exist in different structural environments was investigated with Cu2+, Ni2+, Zn2+, Co2+, and Hg2+. Hydrophobic nonpolar divinylbenzene, hydrophilic N,N'-methylenebisacrylamide, and tetraethylene glycol diacrylate monomers were used as the difunctional crosslinking agents. Amino functions were introduced in the polyacrylamides by treatment with ethylenediamine. Reaction of the amino-substituted polymers with CS2 and alkali afforded the dithiocarbamate resins. The structural parameters of the polymer matrix like the relative hydrophobic/hydrophilic nature, crosslinked d., and the mol. character of the crosslinks exerted a significant influence on the extent of complexation.

Keywords

polymer metal complex manuf
crosslinked polyacrylamide dithiocarbamate functionalized complex
copper complex functionalized polyacrylamide ligand
nickel complex functionalized polyacrylamide ligand
zinc complex functionalized polyacrylamide ligand
cobalt complex functionalized polyacrylamide ligand
mercury complex functionalized polyacrylamide ligand

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Kinetics of coordination
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Transition metals, compounds
reaction products, with dithiocarbamylated crosslinked polyacrylamides, kinetics of complexation of, effect of crosslink d. on
75-15-0, dithiocarbamylation products with amine-functionalized crosslinked polyacrylamides, complexes with transition metal ions
107-15-3, reaction products with crosslinked acrylamide copolymers, dithiocarbamylation products, complexes with transition metal ions
7439-97-6, complexes with dithiocarbamoylated crosslinked polyacrylamides
7440-02-0, complexes with dithiocarbamoylated crosslinked polyacrylamides
7440-48-4, complexes with dithiocarbamoylated crosslinked polyacrylamides
7440-50-8, complexes with dithiocarbamoylated crosslinked polyacrylamides
7440-66-6, complexes with dithiocarbamoylated crosslinked polyacrylamides
25034-58-6, amination and dithiocarbamylation products, transition metal ion complexes
61722-10-9, amination and dithiocarbamylation products, transition metal ion complexes
129674-53-9, amination and dithiocarbamylation products, transition metal ion complexes
prepn. and kinetics of complexation of, effect of crosslink d. on

115:72287
Polymerization of acrylamide in the presence of a reversible redox initiating system containing immobilized metalloporphyrins.
Patapov, G. P.; Alieva, M. I. (Syktyvka. Gos., Syktyvka, USSR). Izv. Vyssh. Uchebn. Zaved., Khim. Khim. Tekhnol., 34(1), 107-10 (Russian) 1991. CODEN: IVUKAR. ISSN: 0579-2991. DOCUMENT TYPE:
Journal CA Section: 35 (Chemistry of Synthetic High Polymers)
Polymn. of acrylamide occurred in aq. medium in the presence of reversible redox initiating system contg. metalloporphyrins immobilized in polyacrylamide gel, H2O2, and ascorbic acid (I). The polymn. rate and mol. wt. of the obtained polymer depended on the type of metal (Fe3+, Cu2+, Ce4+, Ti4+, Mn2+) in the porphyrin complex, polymn. temp., and concn. of I.

Keywords

porphyrin metal complex polymn catalyst
redox polymn acrylamide porphyrin complex
ascorbic acid metalloporphyrin polymn catalyst
hydrogen peroxide metalloporphyrin polymn catalyst

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Polymer-supported reagents
catalysts, polyacrylamide gel-immobilized, metalloporphyrins, contg. hydrogen peroxide and ascorbic acid, for redox polymn. of acrylamide
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metal complexes, catalysts, contg. hydrogen peroxide and ascorbic acid, polyacrylamide gel-immobilized, for redox polymn. of acrylamide
Polymerization catalysts
redox, metalloporphyrins, contg. hydrogen peroxide and ascorbic acid, polyacrylamide gel-immobilized, for acrylamide
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7439-89-6, complexes with porphyrins
7439-96-5, complexes with porphyrins
7440-32-6, complexes with porphyrins
7440-45-1, complexes with porphyrins
7440-50-8, complexes with porphyrins
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50-81-7, uses and miscellaneous
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7722-84-1, uses and miscellaneous
catalysts, contg. metalloporphyrins and ascorbic acid, polyacrylamide gel-immobilized, for redox polymn. of acrylamide
9003-05-8
prepn. of, redox polymn. catalysts for, polyacrylamide gel-immobilized metalloporphyrin-ascorbic acid-hydrogen peroxide system as

114:87843
Use of a supported transition metal phthalocyanine catalyst for removing organic compounds containing oxygen and/or nitrogen from waste gases.
Steinbach, Friedrich; Ellmers-Kutzinski, Reinhild; Brunner, Andreas; Mueller, Holger (Fed. Rep. Ger.). Eur. Pat. Appl. EP 400590 A1 5 Dec 1990, 8 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE. (European Patent Organization) CODEN: EPXXDW.
CLASS: ICM: B01D053-36. ICS: B01J031-18. APPLICATION: EP 90-110213 30 May 1990. PRIORITY: DE 89-3917900 1 Jun 1989.
DOCUMENT TYPE: Patent CA Section: 59 (Air Pollution and Industrial Hygiene)
The title catalyst comprises transition metal phthalocyanines loaded on on a washcoat of Fe, Mn, Co, and/or oxidant. The catalyst is suitable for NO redn. and for oxidn. of hydrocarbons and volatile org. compds. contg. O and/or N, e.g., alcs., ketones, aldehydes, ethers, acids, esters, amides, and amines, in waste gases.

Keywords

transition metal catalyst waste gas
phthalocyanine transition metal catalyst redn

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7697-37-2, uses and miscellaneous
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1302-88-1
15490-99-0
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7439-89-6, uses and miscellaneous
7439-96-5, uses and miscellaneous
7439-98-7, uses and miscellaneous
7440-02-0, uses and miscellaneous
7440-47-3, uses and miscellaneous
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7440-50-8, uses and miscellaneous
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74-98-6, uses and miscellaneous
100-46-9, uses and miscellaneous
141-78-6, uses and miscellaneous
630-08-0, uses and miscellaneous
10102-43-9, uses and miscellaneous
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132-16-1
147-14-8
14325-24-7
three-way catalyst, for waste gas treatment
574-93-6, transition metal complexes

three-way catalysts, for waste gas treatment

114:34377
Formation of oxide ceramic thin-film superconductor using ultraviolet rays and infrared rays.
Shimotomai, Michio; Kakio, Yasuhiro; Tate, Yoshihito; Seki, Akira (Kawasaki Steel Corp.; Kawatetsu Mining Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02194176 A2 31 Jul 1990 Heisei, 4 pp. (Japan) CODEN: JKXXAF. CLASS: ICM: C23C016-30. ICS: C01B013-20; H01B012-06; H01B013-00; H01L039-24.
APPLICATION: JP 89-10019 20 Jan 1989. DOCUMENT TYPE:
Patent CA Section: 76 (Electric Phenomena) Section cross-reference(s): 57, 75
The title superconductor is prepd. from a gas mixt. of org. metals and ^{3}1 gases selected from O, N2O, and O3 by activation, decompn., and deposition on a substrate in vacuo under simultaneous irradn. of IR and UV. BiPh3, dipivaloylmethanatostrontium, dipivaloylmethanatocalcium, dipivaloylmethanatocopper, and dipivaloylmethanatolead were hot-vaporized, mixed with N2O gas, and and heated under UV and IR irradn. in vacuo to create a thin-film superconductor on a Si single-crystal substrate, which had transition temp. 78 K.

Keywords

thin film supported superconductor deposition
ceramic film superconductor vapor deposition
UV IR irradn vapor deposition
pivaloylmethanato metal complex vapor deposition
nitrous oxide chem vapor deposition
bismuth calcium copper strontium oxide superconductor
lead copper oxide ceramic superconductor

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Superconductors
thin-film, chem. vapor deposition of org. metal compd. and oxygen or nitrous oxide or ozone for, UV and IR irradn. in
603-33-8
7782-44-7, uses and miscellaneous
10024-97-2, uses and miscellaneous
10028-15-6, uses and miscellaneous
36530-44-6
36830-74-7
118448-18-3
in thin-film superconductor chem. vapor deposition with IR and UV irradn.
114901-61-0
116739-98-1
prepn. of thin-film superconductor of, chem. vapor deposition for, UV and IR irradn. in

112:234816
Preparation of monocarboxylic acid anhydrides by carbonylation of esters or ethers in the gas phase using supported group VIII metal complex catalysts.
Luft, Gerhard; Trabold, Peter (Hoechst A.-G., Fed. Rep. Ger.). Eur. Pat. Appl. EP 336216 A1 11 Oct 1989, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, NL. (European Patent Organization) CODEN: EPXXDW. CLASS: ICM: C07C053-12. ICS: C07C051-54. APPLICATION: EP 89-105112 22 Mar 1989.
PRIORITY: DE 88-3811343 2 Apr 1988. DOCUMENT TYPE: Patent

CA Section: 23 (Aliphatic Compounds) Section cross-reference(s): 78

Anhydrides (RCO)2O (R = C1-4 alkyl) are prepd. by gas-phase carbonylation of esters RCO2R or ethers ROR at 130-140° and 1-150 bar in the presence of an iodine or Br compd. promoter and a supported group VIII metal chelate catalyst where the chelator is a bidentate ligand I or II [Y = N(R2)2, N-contg. aryl, P(R2)2, As(R2)2, SR2, SH; Z = H, aryl, (un)substituted Ph; R1 = H, C1-3 alkyl; R2 = C1-6 alkyl, C5-6 cycloalkyl, (un)substituted Ph or CH2Ph; m = 2-6, esp. 2-4]. Thus, 2 mL MeOAc, 0.5 mL MeI, and 5.04 g bis[bis(diphenylphosphino)diphenylhexane]rhodium(I) chloride (III) catalyst (0.1 wt.% Rh on Al2O3) were autoclaved at 180° under 15 bar CO for 1 h to give 44 g Ac2O/g Rh-h with 97% selectivity. Six carbonylations and 4 catalyst prepns. are described.

Keywords

anhydride
carbonylation ester ether rhodium catalyst

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Ethers, reactions
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Carbonylation catalysts
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Carboxylic acids, esters
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Wittig reaction of, with dihydrocinnamaldehyde
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106-98-9, reactions
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23055-11-0
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125482-98-6
126346-99-4
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616-21-7
125482-97-5
126374-94-5
prepn. and reaction of, with sodium diphenylphosphide
126282-14-2
126282-15-3
127203-31-0
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74-88-4, uses and miscellaneous
7553-56-2, uses and miscellaneous

7726-95-6, uses and miscellaneous
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4376-01-6
reaction of, with bicinal dibromoalkane derivs.

110:59846
Catalytic hydrogenation of canola and soybean oils using transition metal complexes and supported/unsupported palladium.
Hsu, Noel Yu Wee (Univ. Toronto, Toronto, ON, Can.). No pp. Given Avail. NLC From: Diss. Abstr. Int. B 1988, 49(4), 1287 (English) 1988.
DOCUMENT TYPE: Dissertation CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Abstract Unavailable

Keywords

canola oil hydrogenation catalyst
soybean oil hydrogenation catalyst
palladium catalyst hydrogenation oil
hydrogenation canola soybean oil
transition metal complex catalyst hydrogenation
catalyst hydrogenation canola soybean oil

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Soybean oil
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Hydrogenation catalysts
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Transition metals, compounds
complexes, catalysts, for hydrogenation of canola and soybean oils
Rape oil
erucic acid-low, hydrogenation of, catalysts for, transition metal complexes and palladium as
7440-05-3, uses and miscellaneous
catalysts, for hydrogenation of canola and soybean oils

108:211092
Elucidation of chemical interaction in the macrocyclic metal complex-metal oxide systems and application of their functions.
Mochida, Isao (Inst. Adv. Mater. Study, Kyushu Univ., Fukuoka 816, Japan). Kenkyu Hokoku - Asahi Garasu Kogyo Gijutsu Shoreikai, 50, 177-85 (Japanese) 1987. CODEN: AGKGAA. ISSN: 0365-2599.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 66
The dependence of catalytic properties of TiO2-supported CoTPP (Co tetraphenylporphyrin complex) on support nature and preheating conditions was examd. for 2 kinds of supported CoTPP catalysts. Kinetic studied were made for CO-O2, NO-CO, and NO-H2 reactions. Adsorption of 1 or 2 components, catalyst poisoning, ESR data, thermogravimetry during preheating, and soly. of supported CoTPP are discussed. One catalyst was prepd. by impregnating TiO2 prepd. from TiO(SO4) by calcination at 120° with a C6H6 soln. of CoTPP and heating in vacuum at 250° before use. The other catalyst was prepd. in the similar way except that the calcination and preheating temps. were 300° and 200°, resp. The effect of preadsorption of H2O or O2 was examd. on the CO-O2 reaction. ESR spectra were taken in the absence and presence of O2. The catalyst activities depend greatly on

the support nature and on the preheating temps. For the CO-O2 and NO-CO reactions, the 1st catalyst is more active, while the activity order is reversed for the NO-H2 reaction. Preheating the first catalyst causes oxidative dimerization of CoTPP and generation of O vacancies on the TiO2 surface to provide sites with high activation capability for CO, NO, and O2, whereas preheating the 2nd catalyst causes electron donation to CoTPP (with no structural change) from completely dehydrated TiO2 surface, and the ligand anion radical which is formed displays a high activation ability for H2. Sepn. of CO from mixed gases by the 1st catalyst is discussed.

Keywords

oxidn catalyst cobalt porphyrin support
titania support cobalt porphyrin catalyst
nitric oxide oxidn carbon monoxide
hydrogen nitric oxide reaction
adsorption cobalt porphyrin titania catalyst

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Oxidation catalysts
cobalt tetraphenylporphyrin-titania, for carbon monoxide
14172-90-8
catalyst, titania-supported, for oxidn. of carbon monoxide
13463-67-7, uses and miscellaneous
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10102-43-9, reactions
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630-08-0, reactions
oxidn. of, on cobalt tetraphenylporphyrin-titania catalyst
1333-74-0, reactions
reaction of, with nitric oxide on cobalt tetraphenylporphine-titania catalyst

108:209379
Metal complex heterogeneous catalysts for treatment of waste gases from nitric acid production.
Ivasenko, V. L.; Sayapin, E. V.; Davydov, A. A.; Egorova, G. M. (Tomsk. Politekh. Inst., Tomsk, USSR). Zh. Prikl. Khim. (Leningrad), 61(3), 475-9 (Russian) 1988. CODEN: ZPKHAB. ISSN: 0044-4618.
DOCUMENT TYPE: Journal CA Section: 59 (Air Pollution and Industrial Hygiene) Section cross-reference(s): 49, 67
Al2O3-supported compds. of the formulas M[Fe(CN)5NO] and M2[Fe(CN)6], where M = Mn, Fe, Co, Ni, or Cu, are active catalysts for NOx redn. with NH3 and thus are suitable for the treatment of waste gases from HNO3 manuf.

Keywords

nitric acid waste gas catalyst
nitrogen oxide redn ammonia catalyst
ferrocyanide catalyst nitrogen oxide redn

Index Entries

Reduction catalysts
ferrocyanides, for nitrogen oxide redn. with ammonia in waste gases from nitric acid manuf.
Waste gases
from nitric acid manuf., nitrogen oxide removal from, by redn. with ammonia, ferrocyanide catalysts for

14709-56-9
14709-61-6
25869-27-6
26045-95-4
33751-96-1
catalyst, alumina-supported, for nitrogen oxide redn. with ammonia in treatment of waste gases from nitric acid manuf.
7664-41-7, reactions
redn. by, of nitrogen oxides in treatment of waste gases from nitric acid manuf., catalysts for
7697-37-2, preparation
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107:38953
Silicon-supported transition metal complex catalysts. VII. Effect of supports on catalyst activity.
Liu, Jiwan; Gong, Jianchun; Xiao, Chaobo; You, Jiang; Chen, Yuanyin (Wuhan Univ., Peop. Rep. China). Wuhan Daxue Xuebao, Ziran Kexueban, (2), 77-82, 99 (Chinese) 1986. CODEN: WTHPDI. ISSN: 0253-9888. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry)
Six catalysts were prepd. by supporting the poly-g-(m-diphenylphosphinophenyl)propylsiloxane-Pd complex or poly-g-diphenylphosphinoundecylsiloxane-Pd complex on Si-Mg absorbent, Al2O3, or SiO2. The activity of these catalysts for olefin hydrogenation was studied. The polymer-bound Pd complexes all showed very high activity, with their relative activity in the following sequence Si-Mg absorbent, Al2O3, SiO2. The activity of the catalysts prepd. from g-(m-diphenylphosphinophenyl) propylisiloxane is higher than that of catalysts prepd. from g-diphenylphosphinoundecylsiloxane, using the same substrate and conditions. The activity of the catalysts decreased with increasing P/Pd ratio.

Keywords

palladium polymer complex catalyst olefin hydrogenation
alumina palladium polymer complex catalyst
silica palladium polymer complex catalyst
magnesium absorbent palladium polymer complex catalyst

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Siloxanes and Silicones, uses and miscellaneous
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7440-05-3, complexes with polyphenylphosphinosiloxanes
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100-41-4, reactions
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106:195645

Studies on the synthesis of polymer metal complex and its application to organic reactions.
Whang, Kyu Ja; Kim, Young Ju; Lee, Yong Keun (Dep. Manuf. Pharm., Sookmyung Women's Univ., Seoul 140, S. Korea). Taehan Hwahakhoe Chi, 30(5), 449-55 (Korean) 1986. CODEN: DHWHAB. ISSN: 0418-2472. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry)
Various polymer metal complexes were synthesized from anhyd. AlCl3, FeCl3, SbCl5, SnCl4 and ZnCl2 with cation exchange resin in CS2. The forms of the surfaces and sectioned beads of these polymer metal complexes were obsd. using scanning electron probe microanalyzer. To examine the catalytic activity of polymer metal complexes, the esterification of various dibasic acids with alcs. were carried out. Polymer metal complexes are effective catalysts for esterification of dibasic carboxylic acids.

Keywords

polymer metal catalyst esterification dibasic acid

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7446-70-0, uses and miscellaneous
7646-78-8, uses and miscellaneous
7646-85-7, uses and miscellaneous
7647-18-9
7705-08-0, uses and miscellaneous
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1687-30-5
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88-99-3, reactions
esterification of, by methanol, polymer-bound metal chloride catalysts for

125:222755
Cyclopentadienyl group 6b metal-alkali metal catalyst preparation and their use in homopolymerization of a-olefins.
Beach, David L.; Carney, Michael J.; Mora, Javier M. (Chevron Chemical Company, USA). PCT Int. Appl. WO 9623006 A1 1 Aug 1996, 37 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS,

JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-622. ICS: C08F010-00. APPLICATION: WO 96-US1224 26 Jan 1996.
PRIORITY: US 95-378684 26 Jan 1995. DOCUMENT TYPE: Patent
CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 78
A catalyst system for the homopolymn. of C2-8 a-olefins comprises a Group 6b metal-alkali metal compd. wherein said Group 6b metal is a cyclopentadienyl Group 6b metal trialkaryl complex anion in which the Group 6b metal has an oxidn. state +3 and wherein said complex anion is balanced by an alkali metal cation such as Li and wherein the alkali metal cation is, optionally, coordinately linked to a neutral hydrocarbyl based ligand contg. a heteroatom such as O, N, P, or S, said Group 6b metal-alkali metal compd. being supported on an inorg. support. The catalyst system can contain, in addn., a Group 2 or Group 3 metal-alkyl compd. The catalyst system is esp. suited for homopolymn. of ethylene. Thus, ethylene was polymd. in the presence of isobutylaluminoxane and Li+(h5-pentamethylcyclopentadienyl)tris(benzyl)chromate(III) supported on AlPO4 to give 140 g white, granular solid. The catalyst activity was 2800 g polymer per g catalyst per h, and no Et side branching was obsd.

Keywords

cyclopentadienyl metal complex catalyst olefin homopolymn
chromium cyclopentadienyl lithium complex ethylene homopolymn
supported cyclopentadienyl complex catalyst homopolymn

Index Entries

Polymerization catalysts
Aluminoxanes
supported cyclopentadienyl group 6B metal complex-alkali metal catalyst for homopolymn. of olefins
Aluminoxanes
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106-98-9, miscellaneous
mol. wt. control in ethylene homopolymn. by attempted copolymn. of ethylene in presence of butene in relation to catalyst
110-18-9
6921-34-2
10170-68-0
51905-34-1
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7784-30-7
support; supported cyclopentadienyl group 6B metal complex-alkali metal catalyst for homopolymn. of olefins
162194-47-0
9002-88-4
162194-49-2
supported cyclopentadienyl group 6B metal complex-alkali metal catalyst for homopolymn. of olefins
7429-90-5, alkyl and alkoxide derivs.
supported cyclopentadienyl group 6B metal complex-alkali metal catalyst for homopolymn. of olefins contg.

125:62285
Oxygen-selective sorbents from supported transition element complexes for gas separations.
Mullhaupt, Joseph Timothy; Stephenson, Neil Andrew; Stephenson, Paula Chinn; Notaro, Frank (Praxair Technology, Inc., USA). Eur. Pat. Appl. EP 711598 A2 15 May 1996, 37 pp. DESIGNATED STATES: R: BE, DE, ES, FR, GB, IT, NL. (European Patent Organization). CODEN: EPXXDW. CLASS: ICM: B01J020-28. ICS: B01J045-00; B01J020-32; B01D053-46. APPLICATION: EP 95-117872 13 Nov 1995. PRIORITY: US 94-339872 14 Nov 1994. DOCUMENT TYPE: Patent CA Section: 48 (Unit Operations and Processes) Section cross-reference(s): 49
O-selective adsorbents with enhanced selectivity, loading capacities and O uptake rates comprise a transition metal complex [e.g., meso-tetra(a,a,a,a-o-pivalamidophenyl)porphyrinatocobalt(II)] in solid form supported on a high surface substrate (e.g., silica gel). The transition element complex is substantially uniformly spaced, and includes a transition element ion accessible to an O-contg. gas stream (air) for O sepn.

Keywords

oxygen sepn gas transition metal complex
adsorbent oxygen transition metal complex

Index Entries

Adsorbents
Transition metals, uses
O-selective adsorbents from supported transition metal complexes for O sepns.
Porous materials and Cellular materials
polymers, reaction products, adsorbents; O-selective adsorbents from supported transition metal complexes for O sepns.
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Plastics, cellular
reaction products, adsorbents; O-selective adsorbents from supported transition metal complexes for O sepns.
Air
sepn.; O-selective adsorbents from supported transition metal complexes for O sepns.
Heterocyclic compounds
macrocyclic, nitrogen, reaction products, adsorbents; O-selective adsorbents from supported transition metal complexes for O sepns.
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pillared, reaction products, adsorbents; O-selective adsorbents from supported transition metal complexes for O sepns.
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Oxides, uses
Silica gel, uses
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7782-44-7, preparation
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7440-37-1, preparation
7727-37-9, preparation
O-selective adsorbents from supported transition metal complexes for O sepns.
94-93-9, reaction products
110-86-1, derivs., reaction products
288-32-4, N-derivs., reaction products
4238-71-5, reaction products
7439-89-6, divalent, reaction products
7440-02-0, divalent, reaction products
7440-06-4, divalent, reaction products
7440-16-6, trivalent, reaction products
7440-18-8, divalent/trivalent, reaction products
7440-44-0, reaction products
7440-47-3, divalent, reaction products
7440-48-4, divalent, reaction products
7440-50-8, monovalent, reaction products
14172-90-8
15744-72-6
30346-87-3, reaction products
35296-79-8, reaction products
87680-76-0, reaction products
87842-32-8, reaction products
178391-68-9, reaction products
178391-69-0, reaction products
adsorbents; O-selective adsorbents from supported transition metal complexes for O sepns.

120:32709
Method for obtaining polymer carrier for gel-immobilized metal-complex catalyst system.
Kabanov, V. A.; Chegolya, A. S.; Smetanyuk, V. I.; Mezhirov, M. S.; Prudnikov, A. I.; Fedorova, A. N.; Ulyanova, M. V.; Chizhov, V. V. (Inst neftekhimicheskogo sinteza im.a.v.topchieva; Vnii sinteticheskogo volokna, USSR). U.S.S.R. SU 1077250 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 180. (Union of Soviet Socialist Republics).
CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02.
APPLICATION: SU 81-3357422 26 Nov 1981. DOCUMENT TYPE:
Patent CA Section: 39 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 35, 67
To provide a supported catalyst in the form of a thread of the desired size distribution by a simplified process, a metal complex-forming vinyl monomer is introduced into a 10-30 wt.% soln. of an elastomer in a hydrocarbon solvent and grafted, the graft copolymer soln. is injected as a continuous stream at 1-3 g/min into a 1-20 wt.% dispersion of carbon black, graphite, or metal salts or oxides (1-30 mm particles) in a lower aliph. alc. or ketone, and the graft copolymer threads are dried to residual solvent content 5-10% and vulcanized 30-120 min at 100-160°.

Keywords

immobilized catalyst polymer carrier
metal complex catalyst support
graft copolymer vulcanization
coagulating bath graft copolymer thread
carbon black dispersion coagulating bath

oxide dispersion coagulating bath
graphite dispersion coagulating bath

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7782-42-5, uses
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118:102823
Syntheses of polystyrene-supported chelating resin containing the Schiff base derived from 3-formylsalicylic acid and o-hydroxybenzylamine and its copper(II), nickel(II), iron(III), zinc(II), cadmium(II), zirconium(IV), molybdenum (V and VI) and uranium(VI) complexes. [Erratum to document cited in CA116(12):106965x].
Syamal, A.; Singh, M. M. (Dep. Chem., Reg. Eng. Coll., Kurukshetra 132 119, India). Indian J. Chem., Sect. A: Inorg., Bio-inorg., Phys., Theor. Anal. Chem., 31A(6), 392 (English) 1992. CODEN: ICACEC.
DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38
Three errors in the text have been cor. The errors were not reflected in the abstr. or the index entries.

Keywords

erratum polystyrene Schiff base metal complex
formylsalicylic acid polystyrene metal complex erratum
hydroxybenzylamine polystyrene metal complex erratum

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Polymer-supported reagents
from polystyrene-supported chelating resin contg. Schiff bases derived from formylsalicylic acid and hydroxybenzylamine

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of metal complexes of polystyrene-supported Schiff bases
(Erratum)
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structure of, of metal complexes of polystyrene-supported Schiff
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7439-89-6, complexes with polystyrene-supported Schiff bases,
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7439-98-7, complexes with polystyrene-supported Schiff bases,
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7440-50-8, complexes with polystyrene-supported Schiff bases,
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7440-61-1, complexes with polystyrene-supported Schiff bases,
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7440-66-6, complexes with polystyrene-supported Schiff bases,
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7440-67-7, complexes with polystyrene-supported Schiff bases,
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9003-70-7, chloromethylated, reaction products with formylsalicylic acid
and hydroxybenzylamine, metal complexes
prepn. and properties of (Erratum)

120:135840
Synthesis of polystyrene-supported chelating resin containing an
oxygen-nitrogen donor bidentate Schiff base and its nickel(II),
cobalt(II), copper(II), iron(III), zinc(II), molybdenum(VI) and
uranium(VI) complexes.
Syamal, A.; Singh, M. M. (Dep. Chem., Reg. Eng. Coll., Kurukshetra
132 119, India). Indian J. Chem., Sect. A: Inorg., Bio-inorg., Phys.,
Theor. Anal. Chem., 33A(1), 58-62 (English) 1994. CODEN: ICACEC.
ISSN: 0376-4710. DOCUMENT TYPE: Journal CA Section: 37
(Plastics Manufacture and Processing) Section cross-reference(s): 38
A new bidentate oxygen-nitrogen donor schiff base supported on
polystyrene (I) matrix was synthesized by the reaction of
aminomethylated I and salicylaldehyde. The chelating resin reacts with
metal complex/metal salt and forms metal bound polymers of the
formulas: I-LNi(CH3COO).3DMF, I-LCo(CH3COO).DMF,
I-LCu(CH3COO).DMF, I-LCu(CH3COO).CH3OH, I-LFeCl2.2DMF,
I-LZnCl.CH3OH, I-LCd(CH3COO).DMF, I-LCdCl.CH3OH,
I-LMoO2(acetylacetonato) and I-LUO2(CH3COO).DMF (where I-L =
deprotonated anion of polymer-anchored ligand). The metal bound
polymers were characterized by elemental anal., IR, electronic spectra
and magnetic susceptibility measurements. The complexes
I-LNi(CH3COO).3DMF, I-LCo(CH3COO).DMF, I-LCu(CH3COO).DMF,
I-LCu(CH3COO).CH3OH and I-LFeCL2.2DMF are paramagnetic while
the Zn(II), Cd(II), Mo(VI) and U(VI) complexes are diamagnetic. The
Co(II) and Cu(II) complexes exhibit a square planar structure, whereas
Ni(II), Fe(III), Mo(VI) and U(VI) complexes are octahedral and Zn(II) and
Cd(II) complexes are tetrahedral.

Keywords

polystyrene supported metal chelating resin
magnetic chelating resin metal complex
Schiff base polystyrene supported chelating
oxygen nitrogen bidentate Schiff base
nickel polystyrene supported chelating resin
cobalt polystyrene supported chelating resin
copper polystyrene supported chelating resin
iron polystyrene supported chelating resin
zinc polystyrene supported chelating resin
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uranium polystyrene supported chelating resin

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Magnetic substances
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7439-89-6, complexes with polystyrene-supported Schiff bases
7439-98-7, complexes with polystyrene-supported Schiff bases
7440-02-0, complexes with polystyrene-supported Schiff bases
7440-43-9, complexes with polystyrene-supported Schiff bases
7440-48-4, complexes with polystyrene-supported Schiff bases
7440-50-8, complexes with polystyrene-supported Schiff bases
7440-61-1, complexes with polystyrene-supported Schiff bases
7440-66-6, complexes with polystyrene-supported Schiff bases
9003-70-7, aminomethylated, reaction products with salicylaldehyde, metal complexes
chelating resins, prepn. and characterization of

125:68705
Preparation of supported bimetallic catalysts by means of selective deposition using mobile metal compounds as precursors.
Miura, Hiroshi (Department of Applied Chemistry, Saitama University, Shimo-okubo 255, Urawa-shi, Saitama 338, Japan). Catal. Today, 28(3), 215-221 (English) 1996. CODEN: CATTEA. ISSN: 0920-5861.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 29, 66
The prepn. of supported bimetallic catalysts was examd. by selective deposition of metal complex precursors on the surface of the first metal particles. A Pt-Ru/SiO2 catalyst was prepd. using Pt/SiO2 and ruthenocene as starting materials. Anal. of the surface structure by

means of O2-CO titrn. suggested that Ru metals covered the surface Pt atoms without forming sep. Ru particles. This technique was applied for the prepn. of an egg-shell type of the Pd-Fe bimetallic catalyst supported on alumina, using ferrocene as a precursor of iron. Pt-Sn bimetallic catalysts were prepd. by selective deposition of tetra-Me tin on Pt particles. Liq.-phase deposition was tried in the case of Pd-Ag and Pd-Au catalysts supported on alumina. Selective deposition of Ag and Au on Pd surface was obsd., and the selectivity to 1-butene was increased in the partial hydrogenation of 1,3-butadiene.

Keywords

hydrogenation catalyst supported bimetallic prepn
transition metal complex redn catalyst prepn
carbon oxide oxygen absorption surface structure
selective deposition supported bimetallic catalyst prepn

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Adsorption
of carbon monoxide or oxygen in study of surface structure of supported bimetallic catalysts
Reduction
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Hydrogenation catalysts
supported bimetallic catalyst prepn. and surface structure of
Surface structure
supported bimetallic catalyst studied by adsorption of carbon monoxide or oxygen
1314-13-2, uses
1344-28-1, uses
7439-89-6, uses
7440-05-3, uses
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7440-57-5, uses
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1287-13-4
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630-08-0, processes
7782-44-7, processes
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surface structure study on alumina supported platinum tin catalyst by hydrogenation of

120:163084
Heterogenized complexes of transition metals - catalysts of methylpyridine synthesis from acetaldehyde and ammonia.
Chekurovskaya, E. D.; Akimov, A. N.; Tarasova, T. M. (Sarat. Gos. Univ., Saratov 410026, Russia). Khim. Geterotsikl. Soedin., (6), 773-9

(Russian) 1993. CODEN: KGSSAQ. ISSN: 0132-6244. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry)
The following alumina-supported heterocyclization catalysts were evaluated for the synthesis of 4-methylpyridine from acetaldehyde and ammonia: PdL2Cl2 (L = 2-amino-2-hydroxymethyl-1,3-propanediol, 3-aminocoumarin, Ph3P, Bu3P, Ph3PO) and Pd[4-(2-pyridylazo)resorcinol]Cl (I-VI, resp.). Catalytic activity of N-contg. complexes, decreased in the series I > II > VI; catalytic activity of P-contg. complexes decreased in the series III > V > IV; the overall activity order was III > V > I > IV > II > VI. The optimum Pd content was 0.25-0.5 mass % of the support. M(PPh3)2Cl2 (M = Pt, Co, Ni) displayed similar catalytic activity to III. Catalytic activity was discussed in terms of donor-acceptor ligand-ligand interactions.

Keywords

heterocyclization ammonia acetaldehyde transition complex catalyst
methypyridine
pyridine methyl

Index Entries

Transition metals, compounds
complexes, alumina-supported transition metal complex
catalysts for heterocyclization of acetaldehyde and
ammonia to 4-methylpyridine
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75-07-0, uses
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14264-16-5
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73920-59-9
118953-75-6
alumina-supported transition metal complex catalysts for
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67-68-5, uses
68-12-2, uses
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complex catalysts for heterocyclization of acetaldehyde
and ammonia to 4-methylpyridine

120:32712
Method for obtaining polymer carrier for gel-immobilized metal-complex catalyst system.
Kabanov, V. A.; Chegolya, A. S.; Smetanyuk, V. I.; Mezhirov, M. S.; Prudnikov, A. I.; Fedorova, A. N.; Martynova, M. A. (Inst neftekhimicheskogo sinteza im.a.v.topchieva; Vnii sinteticheskogo volokna, USSR). U.S.S.R. SU 1070882 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 179. (Union of Soviet Socialist Republics).

CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02.
APPLICATION: SU 81-3357421 26 Nov 1981. DOCUMENT TYPE:
Patent CA Section: 39 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 35, 67
To provide a supported catalyst with the desired shape in a simplified manner, a metal complex-forming vinyl monomer is introduced into a 10-30 wt.% soln. of an elastomer in a hydrocarbon solvent and grafted, the graft copolymer soln. is injected in a continuous stream into a lower aliph. alc. or ketone at a rate of 1-2 g polymer/min, and the resulting graft copolymer fiber is dried to residual solvent content 5-10 wt.% and vulcanized at 100-160°.

Keywords

immobilized catalyst polymer carrier
metal complex catalyst support
graft copolymer vulcanization
hydrocarbon solvent graft copolymer recovery
ketone pptn graft copolymer
alc pptn graft copolymer

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Rubber, synthetic
Rubber, natural, reactions
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116:263265
Preparation of supported bimetallic catalysts using metal complex precursors migratory on the support.
Miura, Hiroshi (Dep. Appl. Chem., Saitama Univ., Urawa 338, Japan).
Sekiyu Gakkaishi, 35(3), 226-32 (Japanese) 1992. CODEN:
SKGSAE. ISSN: 0582-4664. DOCUMENT TYPE: Journal CA
Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 22, 66
A new method is reported for the prepn. of supported bimetallic catalysts using migratory complexes as precursors. From the particle structure of supported Pt-Ru catalysts studies by surface compn. measurements, it was suggested that the freedom of precursor during redn. has a significant effect on the structure of the bimetallic particles. In the presence of Pt or Pd particles, redn. of migratory compds. such as ruthenocene, ferrocene, and Cu(acac)2 (Hacac = acetylacetone) took place selectively on the surface of metal particles and thus supported bimetallic catalysts were prepd. This method of prepn. was

applied to the prepn. of egg shell type bimetallic catalysts using egg shell type monometallic catalysts as starting materials. In the prepn. of Pd-Ag/Al2O3 catalysts, liq.-phase selective deposition was tried using the technique of chem. plating. A Pd-Ag/Al2O3 catalyst prepd. by this method showed high selectivity in partial hydrogenation of 1,3-butadiene.

Keywords

hydrogenation catalyst bimetallic prepn
transition metal complex redn bimetallic catalyst
silver deposition bimetallic catalyst prepn
migratory metal complex precursor catalyst prepn
egg shell bimetallic catalyst prepn

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7440-05-3, uses
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7439-89-6, uses
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13395-16-9
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1287-13-4
redn. of, on supported platinum catalysts, in prepn. of bimetallic catalysts

120:165224
Supported polymerization catalysts and preparation of polyolefins.
Inoe, Norihide; Shiomura, Tetsunosuke; Jinno, Masahiro (Mitsui Toatsu Chemicals, Japan). Jpn. Kokai Tokkyo Koho JP 05125112 A2 21 May 1993 Heisei, 7 pp. (Japan). CODEN: JKXXAF. CLASS: ICM:

C08F010-00. ICS: C08F004-658. APPLICATION: JP 91-287664 1 Nov 1991. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 37
Claimed are (1) the catalysts useful for polymg. olefins with good particle properties contg. solid catalysts comprising (A) transition metal compds. with (un)crosslinkable ligands comprising cyclopentadienyl, indenyl, fluorenyl, and/or their derivs., org. Al compds., and fine particle supports and (B) solid cocatalysts comprising transition metal cation-stabilizable compds. and fine particle supports and (2) prepn. of polyolefins in the presence of the solid catalysts optionally assocd. with org. Al compds. Thus, 0.75 dm3 liq. propylene was polymd. in the presence of 0.5 g solid catalyst prepd. from 2.0 g anhyd. MgCl2 (I), 100 mg isopropylidene (cyclopentadienyl)(9-fluorenyl)zirconium dichloride, and 0.4 g Et3Al, and 0.3 g solid cocatalyst prepd. from 2.0 g I and 150 mg triphenylcarbeniumtetrakis(pentafluorophenyl) borate at 40° for 1 h to obtain 18.4 g powd. polypropylene with bulk d. 0.33, syndiotacticity 0.84, and no scaling to reactor walls.

Keywords

powd polyolefin supported polymn catalyst
scaling free polymn solid cocatalyst
transition metal complex supported catalyst
aluminoxane free solid catalyst polymn
coordination compd polymn catalyst olefin

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Transition metals, compounds
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7631-86-9, uses
7786-30-3, uses

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120:32708
Method for obtaining polymer carrier for gel-immobilized metal-complex catalyst system.
Kabanov, V. A.; Arzhakov, S. A.; Smetanyuk, V. I.; Shargorodskij, A. M.; Prudnikov, A. I.; Pishin, G. A.; Grishin, G. A. (USSR). U.S.S.R. SU 1078893 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 180. (Union of Soviet Socialist Republics). CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02. APPLICATION: SU 81-3357423 26 Nov 1981. DOCUMENT TYPE: Patent CA Section: 39 (Synthetic Elastomers and Natural Rubber) Section cross-reference(s): 35, 67
To provide a supported catalyst in the form of a packing material or granules by a simplified process, a metal complex-forming vinyl monomer is introduced into a 10-30 wt.% soln. of an elastomer in a hydrocarbon solvent and grafted, the solvent is removed to residual content 5-10%, the graft copolymer is melt-extruded at 120-130° (residence time 2-4 min), and the extrudate is crosslinked at 100-180° for 30-120 min.

Keywords

immobilized catalyst polymer carrier
metal complex catalyst support
graft copolymer extrusion crosslinking

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Rubber, natural, reactions
graft polymn. of, with complex-forming vinyl monomers, in manuf. of catalyst supports
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immobilized metal complex, manuf. of polymer carriers for
Polymer-supported reagents
metal complex catalysts, manuf. of carriers for
Crosslinking
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Polymerization
graft, soln., of complex-forming vinyl monomers with elastomers, in manuf. of catalyst supports
Extrusion of plastics and rubbers
melt, of metal complex-forming vinyl monomer-grafted elastomers, in manuf. of catalyst supports

123:316549
Study of applied metal complex palladium catalysts for hydrogenation of butadiene-nitrile rubber.
Bagreev, A. A.; Tarasenko, Y. A.; Strelko, V. V.; Glyke, O. A. (Inst. Sorbtsii Probl. Endokrinol., Kiev, Ukraine). Ukr. Khim. Zh. (Russ. Ed.), 60(7-8), 559-65 (Russian) 1994. CODEN: UKZHAU. ISSN: 0041-6045. DOCUMENT TYPE: Journal CA Section: 39 (Synthetic Elastomers and Natural Rubber) Section cross-reference(s): 67
On the base of synthetic active carbons and ion-exchange resins with iminodiacetate groups palladium-contg. metal complex catalysts are obtained. The connection between the porous structure of carriers as well as chem. state of immobilized palladium and the catalyst activity is found out for the process of butadiene-nitrile rubber hydrogenation.

Keywords

palladium complex catalyst nitrile rubber hydrogenation
activated coal supported palladium hydrogenation catalyst
ion exchanger supported palladium hydrogenation catalyst

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meso- and macro-, of the supports; supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber
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supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber
Coal
activated, support; supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber
Hydrogenation catalysts
selective, supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber
10102-05-3
catalyst precursor; supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber
9003-18-3
rubber, supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber
72296-34-5
support; supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber
7440-05-3, uses
supported palladium complex catalysts for selective hydrogenation of butadiene-nitrile rubber

116:106965
Syntheses of polystyrene-supported chelating resin containing the schiff base derived from 3-formylsalicylic acid and o-hydroxybenzylamine and its copper(II), nickel(II), iron(III), zinc(II) cadmium(II), zirconium(IV), molybdenum(V and VI) and uranium(VI) complexes.
Syamal, A.; Singh, M. M. (Dep. Chem., Reg. Eng. Coll., Kurukshetra 132 119, India). Indian J. Chem., Sect. A: Inorg., Bio-inorg., Phys., Theor. Anal. Chem., 31A(2), 110-15 (English) 1992. CODEN: ICACEC. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38
A series of polystyrene-anchored coordination complexes was synthesized by the reaction of metal complex/metal salt with the chelating resin contg. the Schiff base derived from o-hydroxybenzylamine and 3-formylsalicylic acid. The polymer supported complexes were characterized by elemental anal., IR, electronic and EPR spectra, and magnetic susceptibility measurements. The polymer-anchored Cu(II), Ni(II), Fe(III) and Mo(V) complexes were paramagnetic while the Zn, Cd, Mo(VI), U(VI) and Zr(IV) complexes were diamagnetic. The shifts of the n(C=N)(azomethine) and n(C-O)(phenolic) modes were followed to find the donor sites of the ligand. The polymer-anchored Cu(II) complex was square-planar, Zn and Cd were tetrahedral, Ni(II), Fe(III), Mo(V and VI) and U(VI) complexes were octahedral, and Zr(IV) complex was pentagonal-bipyramidal.

Keywords

polystyrene Schiff base metal complex

formylsalicylic acid polystyrene metal complex
hydroxybenzylamine polystyrene metal complex

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from polystyrene-supported chelating resin contg. schiff bases
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Chains, chemical
structure of, of metal complexes of polystyrene-supported Schiff
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Polymers, preparation
Schiff base-contg., polystyrene-supported and their metal
complexes, prepn. and properties of
610-04-8, reaction products with chloromethylated polystyrene and
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932-30-9, reaction products with formylsalicylic acid and
chloromethylated polystyrene, metal complexes
7439-89-6, complexes with polystyrene-supported Schiff bases
7439-98-7, complexes with polystyrene-supported Schiff bases
7440-02-0, complexes with polystyrene-supported Schiff bases
7440-43-9, complexes with polystyrene-supported Schiff bases
7440-50-8, complexes with polystyrene-supported Schiff bases
7440-61-1, complexes with polystyrene-supported Schiff bases
7440-66-6, complexes with polystyrene-supported Schiff bases
7440-67-7, complexes with polystyrene-supported Schiff bases
9003-70-7, chloromethylated, reaction products with formylsalicylic acid
and hydroxybenzylamine, metal complexes
prepn. and properties of

124:118291
Supported polymerization catalysts and method for polymerization of
olefins.
Yano, Katsunori; Tsutsui, Toshuki; Takahashi, Mamoru; Todo, Akira
(Mitsui Petrochemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP
07304826 A2 21 Nov 1995 Heisei, 25 pp. (Japan). CODEN:
JKXXAF. CLASS: ICM: C08F010-00. ICS: C08F004-646.
APPLICATION: JP 94-100264 13 May 1994. DOCUMENT TYPE:
Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section
cross-reference(s): 67
The title catalysts comprise a solid component contg. transition metal
complexes having $^{3}2$ (substituted) cyclopentadienyl ligands, transition
metal complexes having $^{3}2$ ligands selected from hydrocarbylene- or
(substituted) silylene group-bridged (substituted) cycloalkadienyl
groups, and org. aluminoxane compds., and optionally organoaluminum
compds.; and are used in polymn. of olefins via a pre-polymn. step.
Thus, a solid catalyst component prepd. from silica support, Me
aluminoxane, bis(1,3-butylmethylcyclopentadienyl)zirconium dichloride
and ethylenebis(indenyl)zirconium dichloride was used with
triisobutylaluminum in a pre-polymn. of 1-hexene and ethylene, then in a
main polymn. of 1-butene and ethylene to give a 1-butene-ethylene
copolymer with MFR 1.9 g/10-min, d. 0.925 g/cm3 and 23°-decane sol.
fraction 0.10%.

Keywords

olefin polymn catalyst coordination complex
cyclopentadienyl ligand transition metal complex
cycloalkadienyl ligand transition metal complex
aluminum catalyst olefin polymn

zirconium complex olefin polymn catalyst
metallocene catalyst olefin polymn

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Polymerization catalysts
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Alkenes, preparation
a-, polymers, supported polymn. catalysts for manuf.
7631-86-9, uses
catalyst carriers; supported polymn. catalysts and method for polymn. of olefins
100-99-2, uses
100080-82-8
151840-68-5
supported polymn. catalysts and method for polymn. of olefins
25087-34-7
25213-02-9
supported polymn. catalysts for manuf.

123:169692
Selective addition of hydrosilanes to 1,3-dienes catalyzed by polyamide-supported metal complex catalysts.
Michalska, Zofia M.; Ostaszewski, Bogdan; Strzelec, Krzysztof (Institute of Polymers, Technical University of Lodz, Lodz 90-924, Pol.). J. Organomet. Chem., 496(1), 19-26 (English) 1995. CODEN: JORCAI. ISSN: 0022-328X. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 23, 67
Four transition metal complexes [RhCl(CO)2]2, PdCl2(PhCN)2, PtCl2(PhCN)2 and RuCl2(bipy)2 were immobilized on polyamides bearing a pyridine moiety in their repeat units and displaying a relatively uniform distribution of micropores with voids from 1.0 to 3.0 nm. The polymer-supported catalysts were used in the hydrosilylation of isoprene and 2-methyl-1,3-pentadiene with the purpose of investigating the effect of polymer morphol. on the catalyst selectivity. The addn. of HSiMe2Ph and HSi(EtO)3 to both 1,3-dienes catalyzed by the polymer-supported Rh(I) catalysts was found to proceed highly regioselectively and stereoselectively to give (Z)-(2-methyl-but-en-2-en-1-yl)silanes and (Z)-(2-methyl-pent-2-en-1-yl)silanes as the predominant products (85-95%). The stereochem. assignment of the products was carried out by 1H NMR spectroscopy employing the nuclear Overhauser effect. A similar 1,4-addn. of Me2PhSiH to isoprene and 2-methyl-1,3-pentadiene was found to produce Z isomers as the main products for the polymer-supported Pd(II) catalysts. In contrast the same reaction with HSi(EtO)3 proceeded via a 1,2 route with 79-85% selectivity. As a general feature, in all the reactions studied, exception for the hydrosilylations catalyzed by polymer-supported rhodium catalysts, the 1,4 mode of addn. prevailed with HSiMe2Ph, but 1,2 addn. with HSi(EtO)3. Essentially the same regioselectivity was found for reactions under the homogeneous conditions. These results demonstrated that the microporous structure of the polyamide supports did not exert any particular effect on the regioselective and stereoselective course of the reaction. The explanation was based on a good match of the dimensions of the reaction intermediate to those of the polymer micropores. The const. selectivity of the supported catalysts demonstrated during recycling tests showed that they could be useful for practical application.

Keywords

hydrosilylation diene polyamide supported metal catalyst
regiochem stereochem hydrosilylation diene metal catalyst

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Hydrosilylation catalysts
Hydrosilylation
Polymer-supported reagents
Regiochemistry
Stereochemistry
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14523-22-9
14873-63-3
15746-57-3
58998-29-1
159621-99-5
167314-56-9
167314-57-0
78-79-5, reactions
766-77-8
998-30-1
1118-58-7
50598-99-7
63942-83-6
167314-58-1
167314-59-2
167314-60-5
167314-61-6
selective addn. of hydrosilanes to dienes catalyzed by polyamide-supported metal complex catalysts

120:32713
Method for obtaining polymer carrier for gel-immobilized metal-complex catalyst system.
Kabanov, V. A.; Chegolya, A. S.; Smetanyuk, V. I.; Mezhirov, M. S.; Prudnikov, A. I.; Fedorova, A. N.; Rozenberg, L. M.; Kurashev, M. V. (Inst neftekhimicheskogo sinteza im.a.v.topchieva; Vnii sinteticheskogo volokna, USSR). U.S.S.R. SU 1070881 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 179. (Union of Soviet Socialist Republics).
CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02.
APPLICATION: SU 81-3357419 26 Nov 1981. DOCUMENT TYPE:
Patent CA Section: 39 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 35, 67
To provide a supported catalyst with the desired mech. strength, abrasion resistance, and shape, a metal complex-forming vinyl monomer is introduced into a 10-30 wt.% soln. of an elastomer in an org. solvent and grafted, the graft copolymer soln. is deposited on a reinforcement, the solvent is removed, and the reinforced graft copolymer is vulcanized.

Keywords

immobilized catalyst polymer carrier
metal complex catalyst support
graft copolymer vulcanization

Index Entries

Rubber, synthetic
Rubber, natural, reactions

graft polymn. of, with complex-forming vinyl monomers, in manuf. of catalyst supports
Catalysts and Catalysis
immobilized metal complex, manuf. of polymer carriers for
Polymer-supported reagents
metal complex catalysts, manuf. of carriers for
Vulcanization
of reinforced metal complex-forming vinyl monomer-grafted elastomers, in manuf. of catalyst supports
Polymerization
graft, soln., of complex-forming vinyl monomers with elastomers, in manuf. of catalyst supports

120:32711
Method for obtaining polymer carrier for gel-immobilized metal-complex catalyst system.
Kabanov, V. A.; Smetanyuk, V. I.; Prudnikov, A. I.; Bobrov, A. P. (USSR). U.S.S.R. SU 1070883 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 179. (Union of Soviet Socialist Republics). CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02.
APPLICATION: SU 81-3357446 26 Nov 1981. DOCUMENT TYPE:
Patent CA Section: 39 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 35, 67
To provide a supported catalyst in the form of a film, granules, or cylinders of a desired size in a simplified manner, a metal complex-forming vinyl monomer is introduced into a 10-30 wt.% soln. of an elastomer in a hydrocarbon solvent and grafted, the solvent is removed to a residual content of 5-10 wt.%, and the graft copolymer is homogenized on a mill with a crosslinking agent at 50-60° for 15-20 min and simultaneously formed and vulcanized at 165-175°/100-200 atm for 1-10 min.

Keywords

immobilized catalyst polymer carrier
metal complex catalyst support
graft copolymer vulcanization

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Rubber, synthetic
Rubber, natural, reactions
graft polymn. of, with complex-forming vinyl monomers, in manuf. of catalyst supports
Catalysts and Catalysis
immobilized metal complex, manuf. of polymer carriers for
Polymer-supported reagents
metal complex catalysts, manuf. of carriers for
Vulcanization
of metal complex-forming vinyl monomer-grafted elastomers, in manuf. of catalyst supports
Polymerization
graft, soln., of complex-forming vinyl monomers with elastomers, in manuf. of catalyst supports

116:58925
Process for preparing a cycloalkanone and/or cycloalkanol.
Baur, Henricus Anna Christiaan; Kragten, Ubaldus Franciscus; Wolvers, Wilhelmus Petrus (Stamicarbon B. V., Neth.). Eur. Pat. Appl. EP 453021 A1 23 Oct 1991, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE. (European Patent

Organization). CODEN: EPXXDW. CLASS: ICM: C07C045-53. ICS: C07C029-132; C07C045-33; C07C029-50; C07C049-385; C07C035-02; C07C409-14. APPLICATION: EP 91-200831 10 Apr 1991. PRIORITY: NL 90-893 14 Apr 1990. DOCUMENT TYPE: Patent
CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

Ketones and alcs. were prepd. by oxidn. of cyclic hydrocarbons with O2 to form hydroperoxides, followed by decompn. of the hydroperoxides in the presence of a metal phthalocyanine or metal porphyrin complex immobilized on a carrier. Thus, a catalyst obtained by reaction of Co phthalocyaninetetrasulfonic acid with (3-aminopropyl)trimethoxysilane-modified silica in the presence of dicyclohexylcarbodiimide in DMF was used to decomp. a fluorene oxidn. mixt. (3% 9-hydroperoxyfluorene, 1% fluorenol, 1% fluorenone in fluorene, dissolved in benzene) at 65° with a selectivity to fluorenol and fluorenone of 98.5%.

Keywords

hydroperoxide thermolysis metal phthalocyanine porphyrin
ketone prepn immobilized metal complex
alc prepn immobilized metal complex
polymer supported catalyst thermolysis hydroperoxide

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Kinetics of thermal decomposition
of hydroperoxides with polymer-attached metal complex catalysts
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7439-89-6, complexes with polymer-attached phthalocyanines and porphyrins
7439-96-5, complexes with polymer-attached phthalocyanines and porphyrins
7440-47-3, complexes with polymer-attached phthalocyanines and porphyrins
7440-48-4, complexes with polymer-attached phthalocyanines and porphyrins
7440-50-8, complexes with polymer-attached porphyrins
7440-62-2, complexes with polymer-attached phthalocyanines and porphyrins
7631-86-9, reaction products with trimethoxysilanes and metal phthalocyanine or porphyrin complexes
9003-70-7, reaction products with metal phthalocyanines
13822-56-5, reaction products with silica and metal phthalocyanine complexes
25511-95-9, reaction product with thionyl chloride and styrene-divinylbenzene copolymer
27137-16-2, reaction product with modified silica
28802-06-4, reaction product with modified silica
61368-69-2, reaction product with modified silica
105271-05-4, reaction products with silica and metals
106548-06-5, reaction product with silica
110020-11-6, reaction product with modified silica
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127917-47-9, reaction product with silica
129510-67-4, reaction product with thionyl chloride and styrene-divinylbenzene copolymer

138395-07-0, reaction product with modified silica
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4198-93-0
6682-22-0
7517-72-8
138554-10-6
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86-73-7
519-73-3
2027-17-0
17059-55-1
oxidn. of, with polymer-attached metal complex catalysts
76-84-6
486-25-9
1689-64-1
52096-49-8
67757-64-6
72775-34-9
prepn. of

118:171467
Heterogeneous catalysts for high-degree oxidation of saturated hydrocarbons.
Szalajko, Urszula; Maslinska-Solich, Jolanta; Fiszer, Stefania; Jasiulek, Katarzyna; Szaton, Alina (Wydz. Chem., Politech. Slaska, Gliwice, Pol.). Przem. Chem., 72(1), 12-14 (Polish) 1993. CODEN: PRCHAB. ISSN: 0033-2496. DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Heterogeneous Mn and Co catalysts were obtained either by complexation of Mn2+ or Co2+ with limonene-maleic anhydride copolymer (I) or maleic anhydride-b-pinene copolymer (II), or by using zeolite 13X as support for Mn2+ ions. The activity of these catalysts with respect to oxidn. rate and yield of oxidn. of paraffin hydrocarbons and n-hexadecane (model compd.) to carboxylic acids was compared. The activity of Mn catalysts was higher than that of Cr catalysts. The catalytic activity of Mn catalysts in the initial oxidn. stages decreased in the order: zeolite-supported catalysts > I-supported catalyst > II-supported catalyst. However, in advanced oxidn. stages, their activity decreased in the order: I-supported catalyst > zeolite-supported catalyst > II-supported catalyst.

Keywords

heterogeneous oxidn catalyst satd hydrocarbon
manganese heterogeneous catalyst oxidn hydrocarbon
cobalt heterogeneous catalyst oxidn hydrocarbon
limonene copolymer metal complex catalyst
pinene copolymer metal complex catalyst
furandione copolymer metal complex catalyst
zeolite cobalt manganese oxidn catalyst

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Polymer-supported reagents
cobalt and manganese, catalysts, for oxidn. of satd. hydrocarbons
Oxidation catalysts
cobalt and manganese, zeolite- or polymer-supported, for satd. hydrocarbons
Hydrocarbons, reactions
oxidn. of, heterogeneous cobalt and manganese catalysts for
Carboxylic acids, preparation
prepn. of, by oxidn. of satd. hydrocarbons, heterogeneous cobalt and manganese catalysts for

Zeolites, uses
13X, supports, for manganese catalysts, for oxidn. of satd. hydrocarbons
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7439-96-5, uses
catalysts, polymer- or zeolite-supported, for oxidn. of satd. hydrocarbons
544-76-3
oxidn. of, heterogeneous cobalt and manganese catalysts for
97235-51-3
146915-07-3
supports, for manganese and cobalt catalysts, for oxidn. of satd. hydrocarbons

124:118292
Polymerization catalysts for multistage polymerization of olefins.
Yano, Katsunori; Tsutsui, Toshuki; Takahashi, Mamoru; Todo, Akira (Mitsui Petrochemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 07304830 A2 21 Nov 1995 Heisei, 19 pp. (Japan). CODEN: JKXXAF. CLASS: ICM: C08F210-00. ICS: C08F004-642; C08F004-655. APPLICATION: JP 94-98908 12 May 1994.
DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
The title catalysts comprise aluminoxanes, metallocenes (A) having $^{3}2$ substituted cyclopentadienyl ligands, metallocenes (B) having $^{3}2$ ligands selected from hydrocarbylene- or (substituted) silylene-bridged (substituted) cycloalkadienyl groups, and optionally organoaluminum compds.; and are used in polymn. of olefins with a pre-polymn. step in a multistep process using multiple reactors. Thus, a solid catalyst component prepd. from silica carrier, Me aluminoxane, bis(1,3-butylmethylcyclopentadienyl)zirconium dichloride and ethylenebis(indenyl)zirconium dichloride was used with triisobutylaluminum in a pre-polymn. of 1-hexene and ethylene in one reactor, then in a main polymn. of similar monomers in another reactor.

Keywords

olefin polymn catalyst coordination complex
cyclopentadienyl ligand transition metal complex
cycloalkadienyl ligand transition metal complex
aluminum catalyst olefin polymn
zirconium complex olefin polymn catalyst
metallocene catalyst olefin polymn

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Polymerization catalysts
Sandwich compounds
supported polymn. catalysts and method for polymn. of olefins
Aluminoxanes
Me, supported polymn. catalysts and method for polymn. of olefins
Alkenes, preparation
a-, polymers, supported polymn. catalysts and method for polymn. of olefins
7631-86-9, uses
catalyst carriers; supported polymn. catalysts and method for polymn. of olefins
100-99-2, uses
100080-82-8
151840-68-5
25213-02-9

supported polymn. catalysts and method for polymn. of olefins

124:16258
Catalytic activity of a rhodium metal complex supported on AN-31 ion exchanger.
Partshikova, G. N.; Korneva, L. I.; kononov, Yu. S. (Inst. Khim. Khim.-Metall. Protsessov, SO RAN, Krasnoyarsk, Russia). Zh. Prikl. Khim. (S.-Peterburg), 68(2), 331-2 (Russian) 1995. CODEN: ZPKHAB. ISSN: 0044-4618. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
The catalytic activity for hydrogen peroxide decompn. of a rhodium metal complex supported on AN-31 ion exchanger was studied. The presence of catalytic activity was established. The dependence of the degree of decompn. of hydrogen peroxide on the rhodium amt. is given.

Keywords

catalysis hydrogen peroxide decompn rhodium complex

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catalytic activity of a rhodium metal complex supported on AN-31 ion exchanger
7440-16-6, uses
13569-65-8
7722-84-1, reactions
catalytic activity of a rhodium metal complex supported on AN-31 ion exchanger

122:31051
Asymmetric catalytic reduction of prochiral ketones with supported metal complexes.
Gamez, Patrick; Fache, Fabienne; Lemaire, Marc (Institut de Recherches sur la Catalyse, Laboratoire de Catalyse et Synthese Organique, Villeurbanne 69622, Fr.). Bull. Soc. Chim. Fr., 131(5), 600-2 (English) 1994. CODEN: BSCFAS. ISSN: 0037-8968. DOCUMENT TYPE: Journal CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 22, 67
Several prochiral ketones have been reduced by hydride-transfer redn. catalyzed by a non-covalently bonded supported catalyst. The reaction gave up to 99% enantiomeric excess at 100% conversion in the case of Me phenylpyruvate. Furthermore, with other substrates an increase in the enantiomeric excess was obtained without a decrease in conversion. This was achieved by using a continuous flow reactor.

Keywords

asym catalytic redn prochiral ketone
supported metal complex catalyst asym redn

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Hydride transfer catalysts
Kinetics of reduction
Reduction catalysts
asym. catalytic redn. of prochiral ketones with supported metal complexes

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98-86-2, reactions
434-45-7
1310-58-3, reactions
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10531-50-7
15206-55-0
20698-91-3
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7631-86-9, uses
good support from 35-70m granulometry; asym. catalytic redn. of prochiral ketones with supported metal complexes
1344-28-1, uses
poor support; asym. catalytic redn. of prochiral ketones with supported metal complexes
12090-11-8
70749-06-3
precursor; asym. catalytic redn. of prochiral ketones with supported metal complexes

121:281433
Selected cyclopentadienyl Group VIB metal alpha-olefin polymerization catalysts and process for polymerizing alpha-olefins.
Carney, Michael J.; Beach, David L. (Chevron Research and Technology Co., USA). Eur. Pat. Appl. EP 595182 A1 4 May 1994, 35 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE. (European Patent Organization). CODEN: EPXXDW. CLASS: ICM: C08F010-00. APPLICATION: EP 93-116983 20 Oct 1993. PRIORITY: US 92-963531 20 Oct 1992. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
The productivity of (C5R5)aMXbL [I, C5R5 = (substituted) cyclopentadienyl, R = H, C1-20 hydrocarbyl, adjacent R's may together form ^{3}1 ring, M = Group VIB metal in the +3 oxidn. state, X = C1-20 hydrocarbyl, L = electron donors contg. atoms such as O, N, P, or S, a, b = 1 or 2, a + b = 3] and [(C5R5)aMXbLm]+ A- (C5R5, M, X, a, b, L = same as in I, A = anion, m = 1 or 2) is improved in the polymn. of C2-8 a-olefins by supporting the compds. on inorg. compds. and, in many cases, adding a Group II or III metal alkyl compd. Thus, ethylene was polymd. 0.5 h in heptane the presence of iso-Bu aluminoxane and I (C5R5 = pentamethylcyclopentadienyl, M = Cr, X = Me, L = THF) adsorbed on Al2O3.2AlPO4 at Al-Cr ratio 27:1 and Cr content 18.4 mmol to give polymer at catalyst activity 173,000 g/g Cr h.

Keywords

olefin polymn catalyst supported metal complex
THF chromium complex catalyst ethylene polymn
alkylmetal compd catalyst olefin polymn
alumina aluminum phosphate support catalyst polymn
isobutyl aluminoxane catalyst ethylene polymn
methylcyclopentadienyl chromium catalyst ethylene polymn
ethylene polymn catalyst supported chromium complex

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Group VIB element compounds
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159066-88-3
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37287-16-4
110739-82-7
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119:130257

Preparation of clay-supported metal complexes and application to catalyses for molecular recognition reactions.
Shimazu, Shogo; Uematsu, Takayoshi (Fac. Eng., Chiba Univ., Chiba 263, Japan). Yuki Gosei Kagaku Kyokaishi, 51(7), 664-70 (Japanese) 1993. CODEN: YGKKAE. ISSN: 0037-9980. DOCUMENT TYPE: Journal; General Review CA Section: 78 (Inorganic Chemicals and Reactions) Section cross-reference(s): 22, 67
A review with 20 refs. Prepn. of metal complexes fixed between smectite layers and mol. recognition catalytic reactions (hydrogenation of alkenes, alkynes, CO compds.) by metal complexes fixed between clay layers are described.

Keywords

review clay metal complex hydrogenation catalyst
mol recognition clay metal complex review

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Smectite-group minerals
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Hydrogenation catalysts
shape-selective, clay-fixed metal complexes, for alkenes and alkynes and carbonyl compds.
Inclusion compounds
intercalation, clay-metal complexes, for shape-selective hydrogenation catalyst

119:72438
Polymer-supported transition-metal complexes for catalytic epoxidation of olefins.
De, Binod B.; Lohray, Braj B.; Dhal, Pradeep K. (Div. Polym. Chem., Natl. Chem. Lab., Pune 411 008, India). Tetrahedron Lett., 34(14), 2371-4 (English) 1993. CODEN: TELEAY. ISSN: 0040-4039. DOCUMENT TYPE: Journal CA Section: 27 (Heterocyclic Compounds (One Hetero Atom)) Section cross-reference(s): 25, 67

Catalytic epoxidn. of different alkenes has been reported using polymer supported Mn(III)-Salen complex in the presence of iodosylbenzene as terminal oxidant. The reagent was prepd. by condensation of 5-H2C:CH-2-HOC6H3CHO with 1,2-diaminocyclohexane followed by metalation with Mn(OAc)2×2H2O in presence of LiCl to give complex I. Thus, I was co-polymd. with (H2C:CHCO2CH2)2 to give the reagent. Treatment of styrene with the polymer-supported reagent in the presence of PhIO for 32 h. gave 82% epoxide and 10% PhCHO.

Keywords

polymer supported transition metal complex
salen complex catalyst epoxidn olefin
iodosylbenzene epoxidn alkene
manganese complex catalyst epoxidn olefin
vinylsalicylaldehyde condensation cyclohexanediamine
bisvinylhydroxybenzylideneaminocyclohexane metalation copolymn
ethanediol dimethacrylate

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23355-97-7
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148695-65-2, Manganese complexes
148779-26-4
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536-80-1
terminal oxidant for epoxidn. of olefins

121:101977
Microbicidal treatment method using coordination compounds.
Okabayashi, Namihiro; Haku, Shihei (Tokuyama Soda Kk, Japan).
Jpn. Kokai Tokkyo Koho JP 06080522 A2 22 Mar 1994 Heisei, 6 pp.
(Japan). CODEN: JKXXAF. CLASS: ICM: A01N055-00.
APPLICATION: JP 92-233510 1 Sep 1992. DOCUMENT TYPE:
Patent CA Section: 5 (Agrochemical Bioregulators)
The surface of substrates (e.g. glass, fibers, ceramics, metals, etc.) are treated with XYZ [X = groups forming coordinate bonds with metal ions; Y = divalent hydrocarbyl (whose main chains may have O, N, S); Z = alkoxysilyl], followed by treatment with metal salt solns. Spherical silica dispersed in H2O was treated with H2N(CH2)2NH(CH2)3Si(OMe)3, then treated with 1N aq. AgNO3 to show good microbicidal activity.

Keywords

microbicide metal complex alkoxysilane industrial

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Glass fibers, uses

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14807-96-6, biological studies
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7440-22-4, amino group-contg. alkoxysilane complexes
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125:196701
Manufacture of polyolefins in the presence of transition metal complexes with wide mol. wt. distribution.
Sugimoto, Ryuichi (Mitsui Toatsu Chemicals, Japan). Jpn. Kokai Tokkyo Koho JP 08157517 A2 18 Jun 1996 Heisei, 6 PP. (Japan).
CODEN: JKXXAF. CLASS: ICM: C08F004-652. ICS: C08F010-00.
APPLICATION: JP 94-298402 1 Dec 1994. DOCUMENT TYPE:
Patent CA Section: 35 (Chemistry of Synthetic High Polymers)
In the title process, olefins are polymd. in the presence of catalyst components comprising (A) transition metal compds. having ligands supported on inorg. oxides and aluminoxanes or (B) reaction products of transition metal compds. having ligands and organometallic compds. and compds. which form ionic compds. by reaction with the reaction products, at varying temps. to cause temp. variation ³10°. Thus, 254 g Me aluminoxane was treated with 300 g HTG 30908 (silica gel) under refluxing for 8 h to give an aluminoxane-supported silica gel, 432 g which was treated with 17.8 g diphenylmethylene(cyclopentadienyl-2,6-di-tert-butylfluorenyl)zirconium dichloride at room temp. for 2 h in 1L PhMe to give a solid catalyst component. Propylene was polymd. at 30-60° for 2 h in the presence of 0.5 g of the catalyst component and 0.9 g Al(Me2CHCH2)3 to give polypropylene with syndiotactic pentad fraction 0.82, intrinsic viscosity 1.32 (in Tetralin, at 135°) 1.32, and mol. wt. dispersity (ratio of wt.-av. mol. wt. to no.-av. mol. wt.) 4.8.

Keywords

polyolefin manuf transition metal complex catalyst
polypropylene manuf transition metal complex catalyst
aluminoxane transition metal complex polymn catalyst
inorg oxide catalyst support polyolefin manuf
mol wt dispersity polyolefin manuf

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catalyst; manuf. of polyolefins in the presence of transition metal complexes with wide mol. wt. distribution
26063-22-9
manuf. in the presence of transition metal complexes with wide mol. wt. distribution

124:88168
Low-cost supported polymerization catalysts for manufacture of polyolefins.
Sugano, Toshihiko; Kurokawa, Hideki; Yamamoto, Kazuhiro; Takahama, Tomohiko (Mitsubishi Kagaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 07292019 A2 7 Nov 1995 Heisei, 13 pp. (Japan).
CODEN: JKXXAF. CLASS: ICM: C08F004-642. ICS: C08F004-64; C08F010-00. APPLICATION: JP 94-92251 28 Apr 1994.
DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
The catalysts comprise (A) conjugated 5-membered ring-type ligand-group IVB-VIB transition metal complexes, (B) reaction products of org. Al compds. with borate RB(OH)2 (R = optionally halogenated C1-10 hydrocarbyl), and (C) particulate supports. A such catalyst was prepd. from (A) dimethylsilylbis(tetrahydroindenyl)zirconium dichloride, (B) reaction product of mono-Bu borate, Et3Al and triisobutylaluminum and (C) Accurel (microporous polypropylene). Polymn. of ethylene using the catalyst was exemplified.

Keywords

ethylene polymn catalyst zirconium compd
borate catalyst olefin polymn
indenyl transition metal complex catalyst
supported catalyst olefin polymn

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96352-41-9

115701-70-7
9002-88-4
low-cost supported polymn. catalysts for manuf. of polyolefins

121:264697
Ultrafine palladium particles supported on chelate resin-metal complexes: promotion effect of lanthanide ions on catalytic activity.
Teranishi, Toshiharu; Toshima, Naoki (Faculty Engineering, Univ. Tokyo, Tokyo 113, Japan). J. Chem. Soc., Dalton Trans., (20), 2967-74 (English) 1994. CODEN: JCDTBI. ISSN: 0300-9246.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Dry beads of chelate resin-metal complexes have been prepd. as catalysts from a resin based on polystyrene functionalized by tridentate iminodiacetate (ida) moieties by both complexing of metal ions and supporting of ultrafine palladium particles. Two methods were employed. When [PdCl4]2- ions were contacted with a chelate resin without metal ions (acid type) or with divalent metal ions, ultrafine palladium particles, produced by subsequent redn., were distributed only on the surface of the resin. On the other hand, when [PdCl4]2- ions were contacted with a chelate resin having trivalent metal ions (which has anion-exchange ability), the palladium particles were distributed uniformly in the resin. The supported ultrafine palladium particles catalyze the hydrogenation of C:C bonds, the activity greatly depnding on both the metal ions coordinated to the ida moieties and the distribution of the palladium particles in the resin. While catalysts with palladium particles on the surface of the resin had higher catalytic activity than those with particles inside the resin, palladium particles supported on chelate resin-lanthanide complexes had higher activity than those supported on resin-divalent metal complexes in spite of the uniform distribution of the palladium particles in the resin in the case of the lanthanide complexes. The promotion effect of the coordinated lanthanide ions varied with the at. no. of the latter, catalysts with unstable nos. of 4f electrons showing the highest catalytic activity.

Keywords

palladium chelate resin metal complex catalyst
promoter lanthanide palladium chelate resin catalyst

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7440-65-5, uses
37360-89-7
ultrafine palladium particles supported on chelate resin-metal complexes and promotion effect of lanthanide ions on catalytic activity

121:86181
Oxidative ethoxycarbonylation of aniline to ethyl phenylcarbamate catalyzed by silica-supported poly-g-aminopropyl siloxane-metal complexes.
Guan, Shiyou; Huang, Meiyu; Jiang, Yingyan (Inst. Chem., Acad. Sin., Beijing 100080, Peop. Rep. China). Chin. J. Polym. Sci., 11(2), 97-102 (English) 1993. CODEN: CJPSEG. ISSN: 0256-7679.
DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
Several SiO2-supported poly(g-aminopropyl siloxane) mono- and bimetal complexes were prepd. and investigated as catalysts for oxidative ethoxycarbonylation of PhNH2 to EtO2CNHPh. The Cu-Co catalyst had high activity and selectivity, and the turnover no. (mol PhNH2 converted/mol metal) was 450 at 150°, 4 MPa (CO/O2 = 3) and 40 h.

Keywords

aminopropylsiloxane metal complex ethoxycarbonylation catalyst
copper aminopropylsiloxane complex ethoxycarbonylation catalyst
cobalt aminopropylsiloxane complex ethoxycarbonylation catalyst
aniline ethoxycarbonylation aminopropylsiloxane complex catalyst
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121:19069
A critical overview of the catalytic potential of zeolite supported metal

complexes.
De Vos, D. E.; Thibault-Starzyk, F.; Knops-Gerrits, P. P.; Parton, R. F.; Jacobs, P. A. (Cent. Oppervlaktescheiknd. Katal., Kathol. Univ. Leuven, Heverless 3001, Belg.). Macromol. Symp., 80(5th International Symposium on Macromolecule-Metal Complexes, 1993), 157-84 (English) 1994. CODEN: MSYMEC. ISSN: 1022-1360. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 78
A review with 129 refs. of some important items for the design of new zeolite-metal complex supramols. After an overview of the synthesis methods for these systems, complexation reactions inside zeolites are discussed in detail. The last part is focused on the effects of encapsulation on the reactivity of the complexes.

Keywords

catalyst zeolite supported metal complex review

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Catalysts and Catalysis
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120:203164
Nafion-supported metal complexes: a resonance Raman and UV-visible spectroscopic study.
Maclean, Angela L.; Armstrong, Robert S.; Kennedy, Brendan J. (Sch. Chem., Univ. Sydney, Sydney 2006, Australia). J. Raman Spectrosc., 24(12), 897-901 (English) 1993. CODEN: JRSPAF. ISSN: 0377-0486. DOCUMENT TYPE: Journal CA Section: 73 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Resonance Raman and UV-visible spectra of cobalt tetraphenylporphyrin and cobalt phthalocyanine in Nafion were recorded. The spectroscopic measurements show that the porphyrin is incorporated into the hydrophobic regions of the polymer while the phthalocyanine is assocd. with the ionic domains. The macrocycles undergo a change in geometry in Nafion, the porphyrins exhibiting a decreased core size in the membrane.

Keywords

cobalt phthalocyanine tetraphenylporphyrin spectra Nafion
resonance Raman metal complex Nafion
UV visible metal complex Nafion

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3317-67-7
14172-90-8
resonance Raman and UV-visible spectroscopic study of, in Nafion

120:55286
Supported catalyst system for polymerization of C2-10-alkenes.
Rieger, Bernhard; Janiak, Christoph (BASF A.-G., Germany). Ger. Offen. DE 4139262 A1 3 Jun 1993, 9 pp. (Germany). CODEN: GWXXBX. CLASS: ICM: C08F004-642. ICS: C08F004-646; C08F004-68; C08F004-02; C08F010-00. ICA: C08F004-58. APPLICATION: DE 91-4139262 29 Nov 1991. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers)
The catalyst system is obtained by (a) addn. of an oligomeric Al oxide compd. to a fine-particle support; (b) addn. of a complex of a Group IVB or VB metal to the product of step (a); and (c) addn. of an oligomeric Al oxide compd. to the product of step (b).

Keywords

supported catalyst polymn alkene

Index Entries

Silica gel, uses
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1291-32-3
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9002-88-4
prepn. of, supported catalyst system for

120:39250
Uses of polynuclear metal complexes to develop designed dispersions of supported metal oxides.
White, Mark G. (Focused Res. Program Surf. Sci. Catal., Georgia Inst. Technol., Atlanta, GA 30332-0100, USA). Catal. Today, 18(1), 73-109 (English) 1993. CODEN: CATTEA. ISSN: 0920-5861. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 78
A review with 46 refs.; the new generation of catalysts will be designed according to the traditional methods of scientific pursuit using the relationships of catalytic properties to surface structure. However, new methods of catalyst synthesis are necessary to usher in this new generation of catalysts. The author believes that one possible route to this catalyst synthesis will begin by fabricating the catalytic ensemble as a discrete metal complex in a single crystal which will allow for its structure to be known by diffraction methods. This crystal will be solvated into discrete metal complexes which are attached to the

appropriate ceramic support as a single layer of such replicates. In the ideal synthesis, the catalytic ensemble will require no further treatment to render it active and the structure of the ensemble on the ceramic is the same as its structure in the single crystal. For these materials, the relationships between structure and properties are unambiguous and the dream of creating heterogeneous catalysts with homogeneous properties becomes a reality. Unfortunately, the synthesis of active metal complexes may be limited to very small no. In these cases when no active metal complex may be synthesized, alternative prepns. may require further treatment to render active the metal complexes. Such active catalysts may be developed after thermolysis of the supported metal complexes to form a designed dispersion of the metal oxides.

Keywords

polynuclear metal complex catalyst dispersion review
oxide catalyst polynuclear metal complex review
cluster metal compd catalyst dispersion review

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120:32710
Method for obtaining polymer carriers for gel-immobilized metal-complex catalyst systems.
Kabanov, V. A.; Arzhakov, S. A.; Smetanyuk, V. I.; Shargorodskij, A. M.; Prudnikov, A. I.; Pishin, G. A.; Grishin, G. A. (USSR). U.S.S.R. SU 1074105 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 179-80. (Union of Soviet Socialist Republics). CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02. APPLICATION: SU 81-3357417 26 Nov 1981. DOCUMENT TYPE: Patent CA Section: 39 (Synthetic Elastomers and Natural Rubber) Section cross-reference(s): 35, 67
To provide a carrier in the form of a packing material or granules by a simplified process, an elastomer is ground, mixed with 10-30 wt.% of a complex-forming vinyl monomer or its transition metal salt and 2-3 wt.% peroxide, melt-formed into a packing material at 120-130° in 2-3 min, granulated, the last 2 steps are repeated 3-4 times, and the desired form is vulcanized at 100-180° for 10-60 min.

Keywords

grafting elastomer complexing agent
transition metal complex vinyl monomer
carrier manuf immobilized catalyst
vulcanization graft copolymer granulate

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119:183110
New efficient metalloporphyrin photocatalysts for kraft lignin photodegradation.
Ion, Rodica Mariana; Gazdaru, Viorel (Zecasin S. A., Photochem. Dep., Bucharest, Rom.). Prog. Catal., 1(2), 21-7 (English) 1992. CODEN: POCTEU. ISSN: 1220-8698. DOCUMENT TYPE: Journal CA
Section: 43 (Cellulose, Lignin, Paper, and Other Wood Products)
The photochem. decompn. of kraft lignin in the presence of some metal oxide photocatalysts occurs with the formation of vanillin as a useful product. For this reaction, the best catalyst is TiO2 alone or Co tetraphenylporphine supported on the metal oxides, esp. TiO2. A possible mechanism for the reaction is discussed.

Keywords

metalloporphyrin catalyst photolysis alkali lignin
cobalt tetraphenylporphine catalyst lignin photolysis
vanillin formation alkali lignin photolysis
titania catalyst photodegrdn lignin

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7631-86-9, uses
13463-67-7, uses
as supports for porphyrin metal complex photolysis catalysts for alkali lignins
14172-90-8
catalysts, supported on metal oxides, for alkali lignin photolysis
121-33-5
formation of, in alkali lignin photolysis with porphyrin metal complexes supported on metal oxides as catalysts
8068-05-1
photolysis of, porphyrin metal complexes supported on metal oxides as catalysts for

118:234638
Syntheses and characterization of copper(II), nickel(II), iron(III), zinc(II), cadmium(II), zirconium(IV), molybdenum(V and VI) and uranium(VI) complexes of polystyrene supported resin containing the schiff base derived from 3-formylsalicyclic acid and o-aminophenol.

Syamal, A.; Singh, M. M. (Dep. Chem., Reg. Eng. Coll., Kurukshetra 132 119, India). Indian J. Chem., Sect. A: Inorg., Bio-inorg., Phys., Theor. Anal. Chem., 32A(1), 42-8 (English) 1993. CODEN: ICACEC. ISSN: 0376-4710. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers)

A new series of polystyrene (I)-supported metal complexes of the formula I-LCu.DMF, I-LNi.3DMF, I-LFeCl.2DMF, I-LZn.DMF, I-LCd.DMF, I-LMoOCl.DMF, I-LMoO2.DMF, I-LZr(OH)2.2DMF, and I-LUO2.DMF (where I-L = deprotonated polymer-anchlored schiff base) were synthesized by the reaction of metal salt/metal complex with the chelating resin contg. the schiff base derived from 3-formylsalicylic acid and o-aminophenol. The polymer-supported metal complexes were characterized by elemental anal., IR, electronic and ESR spectra, and magnetic susceptibility measurements. The geometry of the complexes were comparable with the corresponding metal complexes of non-anchored ligand. The polymer-supported Cu(II) complex was square planar, Zn(II) and Cd(II) complexes were tetrahedral, Ni(II), Fe(III), U(VI) and Mo(V and VI) complexes were octahedral, and zirconium(IV) complex was pentagonal bipyramidal. The polymer-anchlored Ni(II), Cu(II), Fe(III) and Mo(V) complexes were paramagnetic while the Zn(II), Cd(II), Zr(IV), U(VI), and Mo(VI) complexes were diamagnetic.

Keywords

schiff base polystyrene metal complex
copper schiff base contg polystyrene
nickel schiff base contg polystyrene
iron schiff base contg polystyrene
zinc schiff base contg polystyrene
cadmium schiff base contg polystyrene
zirconium schiff base contg polystyrene
molybdenum schiff base contg polystyrene
uranium schiff base contg polystyrene
formylsalicylic acid aminophenol polystyrene deriv
paramagnetic polystyrene metal complex
diamagnetic polystyrene metal complex

Index Entries

Magnetic susceptibility
of schiff base-contg. divinylbenzene-styrene copolymer-metal complexes
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dia-, of schiff base-contg. divinylbenzene-styrene copolymer-metal complexes
95-55-6, reaction products with chloromethylated divinylbenzene-styrene copolymer and formylsalicylic acid, metal complexes
610-04-8, reaction products with chloromethylated divinylbenzene-styrene copolymer and aminophenol, metal complexes
7439-89-6, complexes with schiff base-contg. divinylbenzene-styrene copolymer
7439-98-7, complexes with schiff base-contg. divinylbenzene-styrene copolymer
7440-02-0, complexes with schiff base-contg. divinylbenzene-styrene copolymer
7440-43-9, complexes with schiff base-contg. divinylbenzene-styrene copolymer
7440-50-8, complexes with schiff base-contg. divinylbenzene-styrene copolymer
7440-61-1, complexes with schiff base-contg. divinylbenzene-styrene copolymer
7440-66-6, complexes with schiff base-contg. divinylbenzene-styrene copolymer

7440-67-7, complexes with schiff base-contg. divinylbenzene-styrene copolymer
9003-70-7, chloromethylated, reaction products with formylsalicylic acid and aminophenol, metal complexes
prepn. and characterization of

117:234679
Effect of the nature of crosslinking agents on the thermal decomposition of metal complexes of crosslinked polyacrylamide-supported dithiocarbamates.
Mathew, Beena; Madhusudanan, P. M.; Pillai, V. N. Rajasekharan (Sch. Chem. Sci., Mahatma Gandhi Univ., Kottayam 686 631, India).
Thermochim. Acta, 207, 265-77 (English) 1992. CODEN: THACAS. ISSN: 0040-6031. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers)
The thermal decompn. of metal complexes of dithiocarbamate functions supported on crosslinked polyacrylamides in different structural environments was investigated. The dithiocarbamate functions were incorporated into the polyacrylamide supports by a 2-step polymer-analogous reaction. The phenomenol. and kinetic parameters of the thermal decompn. of the metal complexes varied with the nature of the crosslinking agent in the polymer support. The thermal stabilities of the metal complexes were higher than the stability of the free dithiocarbamate resin. In the Cu(II) and Ni(II) complexes of N,N'-methylenebisacrylamide-crosslinked polyacrylamide-supported dithiocarbamates the Ni(II) complexes had the higher thermal stability. In the Cu(II) and Ni(II) complexes, the activation energy decreased with increasing crosslinking, reached a min., then increased and again decreased. The energy values fit into the general equation for a cubic polynomial. The entropies of the metal complexes were more pos. than the entropy of the uncomplexed resin.

Keywords

thermal decompn acrylamide polymer complex
dithiocarbamate acrylamide polymer metal complex
crosslinking acrylamide polymer metal complex
kinetics thermal degrdn acrylamide copolymer
methylenebisacrylamide acrylamide copolymer metal complex

Index Entries

Crosslinking
of dithiocarbamate-contg. crosslinked acrylamide copolymer-metal complexes, thermal decompn. in relation to
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7439-97-6, complexes with dithiocarbamate-contg. crosslinked acrylamide copolymers
7440-02-0, complexes with dithiocarbamate-contg. crosslinked acrylamide copolymers
7440-48-4, complexes with dithiocarbamate-contg. crosslinked acrylamide copolymers
7440-50-8, complexes with dithiocarbamate-contg. crosslinked acrylamide copolymers
7440-66-6, complexes with dithiocarbamate-contg. crosslinked acrylamide copolymers
25034-58-6, dithiocarbamylated, metal complexes
61722-10-9, dithiocarbamylated, metal complexes
129674-53-9, dithiocarbamylated, metal complexes
thermal decompn. of

118:83234
Molybdenum/alumina catalysts prepared via metal complex precursors. 1. Synthesis of catalysts and their activity in propene metathesis.
Startsev, A. N.; Klimov, O. V.; Khomyakova, E. A. (G. K. Boreskov Inst. Catal., Novosibirsk 630090, Russia). J. Catal., 139(1), 134-41 (English) 1993. CODEN: JCTLA5. ISSN: 0021-9517. DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
Propene metathesis catalysts were obtained by the anchoring of the complexes MoO2(acac)2 (I), (N2H5)2[Mo2O4(C2O4)2(H2O)2] (II), and (NH4)2[Mo3O4(C2O4)3(H2O)3] (III) to g-Al2O3, followed by the treatment of the surface metal complexes with H or CO at elevated temp. The activity of these catalysts was higher than that of those obtained by impregnation and of those prepd. using Mo(C3H5)4. The activity in propene metathesis of the Mo/Al2O3 catalysts obtained from I, II, and III were practically identical. The catalysts were characterized by a lifetime of >100 h at room temp.

Keywords

molybdenum alumina catalyst metathesis propene

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Double decomposition catalysts
molybdenum, alumina-supported, for propylene
7439-98-7, uses
catalysts, alumina-supported, for metathesis of propylene
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130464-22-1
134424-49-0
in prepn. of alumina-supported catalysts for metathesis of propylene
115-07-1, uses
metathesis of, alumina-supported molybdenum catalysts for

125:34209
Peculiarities of homo- and copolymerization of ethylene with propylene using immobilized vanadium catalysts.
Ushakova, T. M.; Gul'tseva, N. M.; Larichev, M. N.; Meshkova, I. N. (Semenov, N. N., Inst. Khimicheskoi Fiziki, Moscow, Russia). Vysokomol. Soedin., Ser. A Ser. B, 38(2), 197-202 (Russian) 1996. CODEN: VSSBEE. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers)
To clarify the nature of activation of ethylene polymn. initiated by heterogeneous metal complex catalysts in the presence of propylene, the kinetics of copolymn. and consecutive co- and homopolymn. of ethylene and propylene with alumina-supported V catalysts was investigated. The surface of a support was studied by thermodesorption mass spectrometry, and the conditions for the prepn. of immobilized catalytic complexes differing in the character of the transition metal interaction with the support were found. The activation of ethylene polymn. in the presence of propylene is possible only when the catalysts contain a dispersed phase of the transition metal compd. on the support surface. The effect of activation depends on the morphol. of nascent polymer and the structure of catalyst matrix and is detd. by the ability of the catalyst to undergo fragmentation induced by the forming polymer.

Keywords

polymn ethylene propylene vanadium catalyst
alumina supported vanadium catalyst ethylene polymn

Index Entries

Polymer morphology
homo- and copolymn. of ethylene with propylene using immobilized vanadium catalysts
Polymerization catalysts
vanadium; homo- and copolymn. of ethylene with propylene using immobilized vanadium catalysts
7632-51-1
7718-98-1
7727-18-6
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97-93-8, uses
100-99-2, uses
cocatalyst; homo- and copolymn. of ethylene with propylene initiated by heterogeneous metal complex catalysts
9002-88-4
9010-79-1
homo- and copolymn. of ethylene with propylene using immobilized vanadium catalysts
1344-28-1, uses
support; homo- and copolymn. of ethylene with propylene initiated by heterogeneous metal complex catalysts

124:145762
Epoxidation of olefins catalyzed by polymer-supported metal b-ketoesterato complexes of iron(III), nickel(II) and cobalt(II).
Dell'Anna, M. M.; Mastrorilli, P.; Nobile, C. F.; Suranna, G. P. (Centro di studi CNR sulle Metodologie Innovative in Sintesi Organiche M.I.S.O., Istituto di Chimica del Politecnico di Bari, trav. 200 Re David, 4 I-70126 Bari, Liege B-4000, Italy). J. Mol. Catal. A: Chem., 103(1), 17-22 (English) 1995. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 27 (Heterocyclic Compounds (One Hetero Atom))
The epoxidn. of linear and cyclic olefins was catalyzed by iron(III), nickel(II) and cobalt(II) centers immobilized on insol. polymers. The latter were obtained by reaction of the polymerizable complexes of Fe(III), Ni(II) and Co(II) with 2-(acetoacetoxy)ethyl methacrylate with acrylamides.

Keywords

epoxidn olefin ketoester metal complex catalyst

Index Entries

Epoxidation catalysts
Epoxidation
Alkenes, reactions
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172172-23-5
173309-73-4
110-83-8, reactions
111-66-0
112-41-4

498-66-8
604-35-3
278-74-0
286-20-4
2855-19-8
2984-50-1
55700-78-2
epoxidn. of olefins catalyzed by polymer-supported metal b-ketoesterato complexes of iron(III), nickel(II) and cobalt(II)

124:90878
CO2 hydrogenation over SiO2-supported heterobinuclear metal complex catalysts.
Shao, Chang Ping (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, Peop. Rep. China). Chin. Chem. Lett., 6(12), 1081-2 (English) 1995. CODEN: CCLEE7.
DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
The activity and MeOH selectivity of SiO2-supported (PPh3)2HPt(m-CO)(m-PPh2)M(CO)4 (M = Cr, MO, W) complex catalysts for CO2 hydrogenation are reported.

Keywords

carbon dioxide hydrogenation platinum catalyst
methanol prodn carbon dioxide hydrogenation

Index Entries

Hydrogenation catalysts
activity and MeOH selectivity of SiO2-supported platinum heterobinuclear complex catalysts for CO2 hydrogenation
94283-17-7
94283-18-8
94283-19-9
67-56-1, preparation
124-38-9, reactions
activity and MeOH selectivity of SiO2-supported platinum heterobinuclear complex catalysts for CO2 hydrogenation

121:256380
Research on polymer-supported rare earth metal complexes IX synthesis, characterization and catalytic activity of rare earth metal complex supported on polymer containing amide groups.
Li, Yuliang; Yu, Guangqian; Zhu, Yongkai; Song, Hongsheng (Changchun Inst. Appl. Chem., Chin. Acad. Sci., Peop. Rep. China). Gongneng Gaofenzi Xuebao, 6(2), 139-42 (Chinese) 1993. CODEN: GGXUEH. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers)
A new poly(styrene-co-acrylamide)-supported NdCl3 complex has been prepd. The characteristics and the IR spectrum of the complex are discussed. The binary systems formed from polymer-supported NdCl3 complex in combination with Al alkyls show good catalytic activity and stereospecificity for butadiene polymn. For Al alkyls, the following order of activity was found: Al(i-Bu)3 > Al(i-Bu)2H > AlEt3.

Keywords

polymn catalyst neodymium alkyl aluminum
polymer support catalyst butadiene polymn

Index Entries

97-93-8, uses
100-99-2, uses
1191-15-7
10024-93-8
24981-13-3
9003-17-2
catalytic activity and stereospecificity of acrylamide-styrene copolymer-supported NdCl3/alkylaluminum catalysts for polymn. of butadiene

121:158220
Polymer-immobilized metal complexes in catalysis of olefin polymerization: structure and reactivity.
Pomogailo, A. D.; D'yachkovskii, F. S. (Inst. Chem. Phys. Chernogolovka, Moscow 142432, Russia). Vysokomol. Soedin., Ser. A Ser. B, 36(4), 651-61 (Russian) 1994. CODEN: VSSBEE. DOCUMENT TYPE: Journal; General Review CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38, 67
General approaches to prepn. of immobilized catalysts, i.e., systems, in which the compd. of transient metal is immobilized on a surface of polymer carrier via chem. bonds, are reviewed with 27 refs. For polymn. of ethylene, catalytic behavior of such systems is reviewed.

Keywords

metal complex immobilized polymn catalyst review
polyethylene synthesis immobilized catalyst review

Index Entries

Polymerization catalysts
polymer-immobilized metal complexes, for olefins
Catalysts and Catalysis
polymer-supported, metal complexes, for olefin polymn.
9002-88-4
prepn. of, polymer-immobilized metal complex catalysts for

120:152704
Porphyrins or their metal complexes supported on supports as stationary phases for HPLC separation of p-electron-containing compounds.
Saito, Hiroshi; Mifune, Masaki; Haginaka, Atsushi (Sumika Chemical Analysis Service, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04148860 A2 21 May 1992 Heisei, 12 pp. (Japan). CODEN: JKXXAF. CLASS: ICM: G01N030-48. ICS: B01D015-08; B01J020-22. APPLICATION: JP 90-274806 11 Oct 1990. DOCUMENT TYPE: Patent CA Section: 80 (Organic Analytical Chemistry) Section cross-reference(s): 78
The title packing material is porphyrins or their metal complexes supported on a support. The porphyrins are porphyrin or azaporphyrin. The metal is Cu, Co, Fe, Ni, or Mn. The support is silica gel or glass beads. p-Electron-contg. compds. can be sepd. with good sepn. coeff., theor. plate no., and peak symmetry.

Keywords

HPLC packing material column
porphyrin metal complex packing material column

Index Entries

Silica gel, compounds
aminated, reaction product with copper phthalocyaninesulfonyl chloride, as stationary phase for HPLC sepn. of p-electron-contg. compds.
Chromatography, column and liquid
high-performance, stationary phases, porphyrins and their metal complexes supported on aminosilica gel or glass beads, for sepg. p-electron-contg. compds.
71-43-2, analysis
84-15-1
85-01-8, analysis
91-20-3, analysis
120-12-7, analysis
217-59-4
sepn. of, from other p-electron-contg. compds., HPLC with porphyrins or their metal complexes-supported stationary phases
88548-02-1, reaction product with aminosilica gel
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75-36-5, reaction product with reaction product of copper phthalocyaninetetrasulfonyl chloride with aminosilica gel
112-13-0, reaction product with reaction product of copper phthalocyaninetetrasulfonyl chloride with aminosilica gel
87709-59-9, reaction product with aminosilica gel
106632-66-0, reaction product with aminosilica gel
stationary phase, for HPLC sepn. of p-electron-contg. compds.

120:87489
Experimental and computer modeling studies of carbon-supported metal complexes. Part 2. Molecular mechanics study of the adsorption of tetraaza[14]annulenes and their nickel(II) complexes by a carbon surface.
Drew, Michael G. B.; Jutson, Nicola J.; Mitchell, Philip C. H.; Potter, Robert J.; Thompsett, David (Dep. Chem., Univ. Reading, Whiteknights/Reading RG6 2AD, UK). J. Chem. Soc., Faraday Trans., 89(21), 3963-73 (English) 1993. CODEN: JCFTEV. ISSN: 0956-5000. DOCUMENT TYPE: Journal CA Section: 66 (Surface Chemistry and Colloids) Section cross-reference(s): 29, 65, 78
A computer model based on mol. mechanics with the addn. of terms to take account of p-p interactions was developed for the study of the adsorption of mols. on an idealized graphite surface. This model is validated by calcn. of the adsorption energy of benzene on graphite; the authors' value compares well with exptl. and previously calcd. values. The authors' model was then used to study the adsorption by graphite of the planar macrocycle 5,14-dihydrodibenzo[b,i][1,4,8,11]tetraazacyclotetradecine (1) and the saddle-shaped mol. 6,8,15,17-tetramethyl-5,14-dihydrodibenzo[b,i]-[1,4,8,11]tetraazacyclotetradecine (3), and their nickel complexes (2 and 4). The interaction energies calcd. by using this model agree with the trend in exptl. adsorption free energies: 2 > 1 > 4 > 3. The min. energy orientation of the planar macrocycles (1 and 2) is parallel to the graphite surface and approx. staggered with respect to the C6 hexagons of the graphite. The attractive interaction is the London dispersion energy. However, the electrostatic interactions (between the p-clouds of the macrocycle and the graphite) are repulsive and are responsible for the staggering of the macrocycles which orient to minimize the p-p repulsions with the surface. The planar nickel complex 2 is optimally oriented with nickel above a graphite carbon, an attractive Ni-p interaction contributing to the bonding. The saddle-shaped compds. 3 and 4 prefer to orient with their CH3 groups next to the surface, a consequence of an attractive

CH3-p interaction, and with the mol. centers above the graphite ring centers.

Keywords

adsorption tetraaza annulene nickel complex graphite
mol mechanics carbon supported metal complex
pi interaction nickel carbon adsorption complex

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Macrocyclic compounds
metal complexes, mol. modeling studies of carbon-supported
Free energy
of adsorption, of macrocyclic ligands and their nickel(II) complexes, on graphite, mol. mechanics calcn. of
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22119-35-3
39251-81-5
51223-51-9
56276-51-8
adsorbed, on graphite, mol. mechanics study of interactions of

120:32411
Method for obtaining polymer carriers for gel-immobilized metal-complex catalyst systems.
Kabanov, V. A.; Smetanyuk, V. I.; Prudnikov, A. I.; Bobrov, A. P. (USSR). U.S.S.R. SU 1070879 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 179. (Union of Soviet Socialist Republics). CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02.
APPLICATION: SU 81-3357230 26 Nov 1981. DOCUMENT TYPE:
Patent CA Section: 38 (Plastics Fabrication and Uses) Section cross-reference(s): 35, 39
To provide a carrier of the desired shape by a simplified process, an elastomer is ground, mixed with 10-30 wt.% of a transition metal salt of a complex-forming vinyl monomer or polymer and 1-2 wt.% peroxide, homogenized on a mill at 50-60° for 10-30 min, and pressed in a mold for 1-5 min at 150-170°/50-200 atm to induce grafting and crosslinking.

Keywords

grafting elastomer complexing agent
transition metal complex vinyl monomer
carrier manuf immobilized catalyst

Index Entries

Transition metals, uses
catalysts, immobilized, manuf. of polymeric carriers for
Rubber, synthetic
Rubber, natural, reactions
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Catalysts and Catalysis
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Crosslinking

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Crosslinking catalysts
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Polymer-supported reagents
transition metal catalysts, support manuf. for
Polymerization
graft, of elastomers with transition metal salts of complex-forming vinyl monomers or polymers, crosslinking and

119:271984
Manufacture of stereospecific polyolefins.
Soga, Kazuo; Shiono, Takeshi; Kaminaka, Manabu (Tokuyama Soda Kk, Japan). Jpn. Kokai Tokkyo Koho JP 05194635 A2 3 Aug 1993 Heisei, 6 pp. (Japan). CODEN: JKXXAF. CLASS: ICM: C08F010-00. ICS: C08F004-658. APPLICATION: JP 91-67686 8 Mar 1991.
DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers)
Olefins are polymd. in the presence of a catalyst system consisting of a supported complex of a Group IVB element contg. 2 cycloalkadienyl groups as solid component and alkylaluminum as promoter. Thus, propylene was polymd. in Ph-Me at 40° in the presence of [Me3Al + ethylenebis(tetrahydroindenyl)zirconium dichloride]/gAl2O3 and Me3Al to give isotactic polypropylene with pentadent fraction 91%.

Keywords

stereospecific polymn olefin
polypropylene isotactic
cycloalkadienyl zirconium complex polymn catalyst
alkylaluminum polymn catalyst olefin
supported metal complex polymn catalyst

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Group IVB element compounds
cycloalkadiene complexes, in catalysts for stereospecific polymn. of olefins
Alkenes, polymers
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Polymerization catalysts
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75-24-1
97-93-8, uses
catalysts, contg. supported zirconium complex, for stereospecific polymn. of olefins
12109-71-6
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112243-80-8
130139-66-1
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7786-30-3, uses
support, for zirconium complex, in catalysts for stereospecific polymn. of olefins
1344-28-1, uses
g-, support, for zirconium complex, in catalysts for stereospecific polymn. of olefins

119:118043
Bisphosphonic acid styryl derivatives, polymers from them and their use as supports for hydrogenation catalysts.
Nasman, Jan Anders H.; Hormi, Osmo; Pajunen, Esko O.; Sundell, Mats J. (USA). U.S. US 5200554 A 6 Apr 1993, 8 pp. (United States of America). CODEN: USXXAM. CLASS: ICM: C07C061-00. ICS: C08F002-00. NCL: 562021000. APPLICATION: US 92-823326 21 Jan 1992. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 29, 37, 45
The title compds. R1CH2YCX[P(O)(OR)2]2 (I; R1 = styryl; Y = unsatd. or satd. alkylene, OCH2CH2O, OCH2CH(OH)CH2; X = H, Me, Et, CO2H; R = H, lower alkyl, hydroxyethyl, or together in pairs are -CH2CH2-) are prepd. New bis(vinylbenzyloxy)alkanes, as well as divinylbenzene, are crosslinkers for polymers including I. Thus, 1-(3-vinylphenyl)propane-2,2-bisphosphonic acid (II) was prepd. in 6 steps from sodium diethyl phosphite and CH2Cl2. Styrene, divinylbenzene, and II were polymd. and the complex with Pd was used in the hydrogenation of 1-octene.

Keywords

bisphosphonic acid styryl deriv polymn
vinylphenylpropane bisphosphonic acid prepn polymn
palladium complex styrene polymer hydrogenation catalyst
crosslinker vinylbenzyloxyalkane styrene polymer

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Crosslinking agents
bis(vinylbenzyloxy)alkanes, for styrene polymers
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7440-05-3, complex with bisphosphonic acid styryl polymer
7440-18-8, complex with bisphosphonic acid styryl polymer
149476-86-8, metal complex
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149476-86-8
149476-87-9
prepn. and functional group characterization of porous
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prepn. and hydrogenation of
146436-06-8
prepn. and hydrolysis of
149476-88-0
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146420-92-0
prepn. and polymn. of, in manuf. of support for reaction catalysts
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prepn. and reaction of, with vinylbenzyl chloride
146436-04-6
prepn. and silylation of
149446-00-4
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84001-05-8
149539-28-6
prepn. of, as crosslinker for bisphosphonic acid styryl polymer

118:103530
Thermal behavior of divinylbenzene (DVB)-crosslinked polystyrene-supported dithiocarbamate-metal complexes.
Mathew, Beena; Madhusudanan, P. M.; Pillai, V. N. Rajasekharan (Sch. Chem. Sci., Mahatma Gandhi Univ., Kerala 686 631, India). Polym. Degrad. Stab., Volume Date 1993, 39(2), 173-7 (English) 1992.
CODEN: PDSTDW. ISSN: 0141-3910. DOCUMENT TYPE: Journal
CA Section: 37 (Plastics Manufacture and Processing) Section cross-reference(s): 38
TGA of the Cu(II) and Ni(II) complexes of dithiocarbamate groups on crosslinked divinylbenzene-styrene copolymers are described. The relative thermal stabilities, decompn. patterns, and the kinetic parameters of decompns. of the different metal complexes are followed. The thermal stabilities of the Ni(II) complexes are higher than those of the Cu(II) complexes. Among the different types of complex, the thermal stability depends on the mode of attachment of the ligand functions to the crosslinked polystyrene support.

Keywords

crosslinked polystyrene dithiocarbamate metal complex
divinylbenzene styrene copolymer metal complex
copper dithiocarbamate crosslinked polystyrene complex
nickel dithiocarbamate crosslinked polystyrene complex
thermal stability crosslinked polystyrene complex

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Kinetics of polymer degradation
thermal, of crosslinked styrene polymer dithiocarbamate deriv. metal complexes, structure in relation to
7440-02-0, complexes with crosslinked styrene polymer dithiocarbamate derivs.
7440-50-8, complexes with crosslinked styrene polymer dithiocarbamate derivs.
9003-70-7, chloromethylated, dithiocarbamate group-contg., metal complexes
thermal behavior of, decompn. kinetics in relation to

118:101575
Multidentate organosilicon-transition metal complex catalysts. II. Synthesis and activity of poly-w-(aminoethylamino)undecylsiloxane palladium complex.
Xiao, Chaobo; Lin, Yigeng; Jing, Zhizhong (Dep. Chem., Wuhan Univ., Wuhan, Peop. Rep. China). Wuhan Daxue Xuebao, Ziran Kexueban, (4), 61-6 (Chinese) 1991. CODEN: WTHPDI. ISSN: 0253-9888.
DOCUMENT TYPE: Journal CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 67
The poly-w-(aminoethylamino)undecylsiloxane palladium complex has been synthesized. The title complex displayed high activity for the hydrogenation of olefins and nitrobenzene in ethanol at 40° under an atm. pressure of hydrogen. Styrene, acrylonitrile, and nitrobenzene were completely hydrogenated within 0.5 ~ 0.68 h. The palladium

complex is highly air stable. The complex is sensitive to thio-ether and thiol, but insensitive to Hg. The rates of hydrogenation can increase in the presence of 10 mL pyridine and Hg(OAc)2. The rates of hydrogenation in a variety solvents decrease in the order: abs. alc. ~ THF > DMF > acetone. The polymer complex can be easily recovered and reused.

Keywords

alkene hydrogenation catalyst palladium
polyaminoethylaminoundecylsiloxane

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Silsesquioxanes
(aminoethylamino)undecyl, silica-bond, palladium complex, prepn. of, as hydrogenation catalyst
Polymer-supported reagents
poly(aminoethylamino)undecylsiloxane palladium complex, catalyst, for hydrogenation of olefins
Hydrogenation catalysts
polymer-supported palladium, for olefins
7446-09-5, condensation product with (aminoethylamino)undecylsiloxane
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98-95-3, reactions
100-42-5, reactions
107-13-1, reactions
110-83-8, reactions
112-41-4
592-41-6, reactions
872-05-9
hydrogenation of, polymer-supported palladium catalyst for
7440-05-3, silica-supported, complex with poly(aminoethylamino)undecylsiloxane
prepn. of, as hydrogenation catalyst for olefin
121772-92-7, silica-bond, palladium complex
prepn. of, as hydrogenation catalyst for olefins
13820-53-6
reaction of, with silica-bond (aminoethylamino)undecylsiloxane

117:172666
Thermogravimetric studies of the metal complexes of polyacrylamide-supported amines: effect of the variables of macromolecular structure of thermal stability.
Mathew, Beena; Madhusudanan, P. M.; Pillai, V. N. Rajasekharan (Sch. Chem. Sci., Mahatma Gandhi Univ., Kottayam 686 631, India).
Thermochim. Acta, 205, 271-82 (English) 1992. CODEN: THACAS.
ISSN: 0040-6031. DOCUMENT TYPE: Journal CA Section: 37 (Plastics Manufacture and Processing)
Acrylamide (I)-divinylbenzene (II) copolymers, I-N,N'-bis(acrylamido)methane (III) copolymers, and I-tetraethylene glycol diacrylate copolymers are modified so that the acrylamide groups are converted to N-2-aminoethylacrylamide groups. The modified copolymers are then complexed with either Co(II), Ni(II), Cu(II), Zn(II), or Hg(II). The thermal properties of the polymeric complexes are followed via thermogravimetric anal.; thermal stability is a function of crosslinking level. Activation energy of decompn. as a function of crosslinking is also examd. The thermal stabilities of the Cu complexes based on II are lower than those of the Cu complexes with III-based polymers.

Keywords

polyacrylamide crosslinked metal complex stability
copper complex acrylamide copolymer crosslinked
nickel complex acrylamide copolymer crosslinked
cobalt complex acrylamide copolymer crosslinked
zinc complex acrylamide copolymer crosslinked
mercury complex acrylamide copolymer crosslinked
transition metal complex acrylamide copolymer

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Crosslinking
of aminated acrylamide copolymer complexes with transition metals, thermal stability in relation to
Kinetics of polymer degradation
of aminated crosslinked acrylamide copolymer complexes with transition metals
Chains, chemical
structure of, of aminated acrylamide copolymer complexes with transition metals, thermal stability in relation to
Transition metals, compounds
complexes, with aminated acrylamide copolymer, thermal stability of
7439-97-6, complexes with aminated crosslinked acrylamide copolymers
7440-02-0, complexes with aminated crosslinked acrylamide copolymers
7440-48-4, complexes with aminated crosslinked acrylamide copolymers
7440-50-8, complexes with aminated crosslinked acrylamide copolymers
7440-66-6, complexes with aminated crosslinked acrylamide copolymers
25034-58-6, aminated, complexes with transition metals
61722-10-9, aminated, complexes with transition metals
129674-53-9, aminated, complexes with transition metals
thermal stability of, structure in relation to

117:131734
Magnesium compound-supported polymerization catalysts for a-olefins.
Sugimoto, Ryuichi; Asanuma, Tadashi; Iwatani, Tsutomu (Mitsui Toatsu Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 04114006 A2 15 Apr 1992 Heisei, 6 pp. (Japan). CODEN: JKXXAF. CLASS: ICM: C08F010-00. ICS: C08F004-654. APPLICATION: JP 90-232536 4 Sep 1990. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
The title catalysts useful for prepn. of stereoregular polyolefins contain organoaluminum compds., Ti compds., and transition metal compd. complexes. Thus, a supported catalyst contg. 1.83% Ti was prepd. by stirring MgCl2 with diisobutyl phthalate and TiCl4. Polymn. of C3H6 by this catalyst 100, isopropyl(cyclopentaidenyl-1-fluorenyl)zirconium dichloride 360, and AlEt3 170 mg at Kg/cm2 and 40° for 2 h gave 82.7 g polypropylene having boiling heptane insol. content 95.5%.

Keywords

propylene polymn catalyst
transition metal complex polymn catalyst
polypropylene isotactic polymn catalyst

Index Entries

Polymerization catalysts
stereospecific, supported, aluminum-titanium-transition metal compds., for manuf. of isotactic polypropylene
78-10-4
78-39-7
84-69-5
97-93-8, uses
7550-45-0, uses
96363-63-2
133517-02-9
polymn. catalysts, supported, for manuf. of isotactic polypropylene
25085-53-4
prepn. of, polymn. catalysts for

123:258490
Infrared spectra of poly(vinyl chloride)-supported Schiff-bases and their metal complexes.
Li, Shijin; Liu, Lizhong; Xiao, Lixin; Yu, Shanxin (Dep. Chem., Hunan Normal Univ., Changsha 4100081, Peop. Rep. China). Fenxi Huaxue, 23(7), 864 (Chinese) 1995. CODEN: FHHHDT. ISSN: 0253-3820.
DOCUMENT TYPE: Journal CA Section: 37 (Plastics Manufacture and Processing) Section cross-reference(s): 78
PVC was reacted with ethylene diamine and then aldehydes (salicylic aldehyde, 4-hydroxybenzaldehyde, furan aldehyde, and crotonic aldehyde) to form poly(vinyl chloride)-supported Schiff-bases. Complexes were formed from these polymers with cobalt, nickel and lanthanum. The IR spectra of these polymers were reported.

Keywords

PVC Schiff base metal complex IR
cobalt PVC Schiff base complex IR
nickel PVC Schiff base complex IR
lanthanum PVC Schiff base complex IR

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90-02-8, reaction products with PVC and ethylenediamine, metal complexes
98-01-1, reaction products with PVC and ethylenediamine, metal complexes
107-15-3, reaction products with PVC and aldehydes, metal complexes
123-08-0, reaction products with PVC and ethylenediamine, metal complexes
4170-30-3, reaction products with PVC and ethylenediamine, metal complexes
7439-91-0, complexes with reaction products of PVC, ethylenediamine, and aldehydes
7440-02-0, complexes with reaction products of PVC, ethylenediamine, and aldehydes
7440-48-4, complexes with reaction products of PVC, ethylenediamine, and aldehydes
9002-86-2, reaction products with ethylenediamine and aldehydes, metal complexes
IR spectra of PVC-supported Schiff-bases and their metal complexes

120:165232
Transition metal complex-aluminoxane catalysts for polymerization of olefins.

Inahara, Kiyoshi; Yano, Akihiro (Tosoh Corp., Japan). Can. Pat. Appl. CA 2086270 AA 28 Jun 1993, 28 pp. (Canada). CODEN: CPXXEB. CLASS: ICM: C08F004-642. ICS: C08F010-00. APPLICATION: CA 92-2086270 24 Dec 1992. PRIORITY: JP 91-358191 27 Dec 1991. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers)
Olefin polymn. catalysts showing high activity are prepd. from a transition metal complex such as ethylenebis(1-indenyl)zirconium dichloride (I) and small amts. of an aluminoxane on a support such as alumina. Alumina was mixed with 8.3 mL toluene contg. 10 mmol I/L and with 0.8 mL toluene contg. 2.42 mmol Me3Al/L, and the solid was dried and used with Me aluminoxane in toluene for the polymn. of propene at 40°.

Keywords

aluminoxane zirconium catalyst polymn olefin
polypropene prepn catalyst aluminoxane zirconium

Index Entries

Polymerization catalysts
aluminoxane-zirconium complex, supported, for olefins
Aluminoxanes
Me, catalysts, zirconium complex-contg., for polymn. of olefins
1344-28-1, uses
aluminoxane-zirconium complex catalyst supported on, for olefin polymn.
112243-78-4
catalysts, aluminoxane-contg., for polymn. of olefins
9003-07-0
prepn. of, aluminoxane-zirconium complex catalysts for

119:279867
Role of cyanate complex in interaction between carbon monoxide and nitric oxide on supported platinum-group metals.
Matyshak, V. A. (Inst. Khim. Fiz., Moscow, Russia). Kinet. Katal., 33(5-6), 1168-73 (Russian) 1992. CODEN: KNKTA4. ISSN: 0453-8811. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
The structure and reactivity of complexes, forming on the surface of supported platinum-group metals, were studied spectroscopically. Cyanato complexes, localized on the metal, are intermediates in the reaction of the formation of mol. N during the reaction of CO and NO. The complex is bonded to the metal through the O atom which corresponds to the 2240 cm-1 absorption band. The complex, localized on the carrier (2260 cm-1), has no effect on the interaction of CO and NO.

Keywords

platinum group metal cyanato complex intermediate
carbon monoxide reaction nitric oxide intermediate
catalyst platinum group cyanato complex intermediate

Index Entries

Platinum-group metals
catalysts, in reaction of carbon monoxide with nitric oxide with cyanato complex as intermediate
Kinetics, reaction
of carbon monoxide with nitric oxide with alumina-supported platinum-group metals with cyanato complex as

intermediate
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7440-05-3, uses
7440-06-4, uses
7440-16-6, uses
7440-18-8, uses
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420-05-3, platinum-group metal complex
intermediate in reaction of carbon monoxide with nitric oxide
10102-43-9, reactions
kinetics of reaction of, with carbon monooxide with platinum-group metal catalysts with cyanato complex as intermediate
630-08-0, reactions
kinetics of reaction of, with nitric oxide with platinum-group metal catalysts with cyanato complex as intermediate
1344-28-1, uses
platinum-group metal catalysts on, in reaction of carbon monoxide with nitric oxide with cyanato complex as intermediate

125:274928
Macromolecular metal complexes as catalysts with improved stability.
Challa, Ger; Reedijk, Jan; van Leeuwen, Piet W. N. M. (Laboratory of Polymer Chemistry, University of Groningen, Groningen, Neth.). Polym. Adv. Technol., 7(8), 625-633 (English) 1996. CODEN: PADTE5. ISSN: 1042-7147. DOCUMENT TYPE: Journal; General Review CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
A review with 25 refs. Polymer-bound tertiary amine-copper complexes and polymer-bound phosphite-rhodium complexes were studied as catalyst for oxidative coupling of phenols and hydroformylation of alkenes, resp. The activity and stability of these catalysts could be tuned or optimized by adapting the structure of the ligands and by changing the distance between adjacent ligands along the polymer chains. The latter effect has been described in terms of strain in the intermediate chain segments in the copper complexes or enhancement of the effective local ligand concn. around the rhodium complexes. So-called immobilized homogeneous catalysts were obtained by end-grafting of both types of macromol. catalysts on to inert and insol. silica particles. These immobilized polymeric catalysts could easily be sepd. and recovered. Under proper conditions a grafted polymer-bound imidazole-copper complex and a new type of polymer-bound tri-Ph phosphite-rhodium complex showed excellent stability in continuous processes.

Keywords

review macromol metal complex catalyst stability

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Catalysts and Catalysis
Hydroformylation catalysts
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Alkenes, reactions
Phenols, reactions
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Transition metal compounds
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Silica gel, uses

graft polymers, macromol. metal complexes as catalysts with improved stability
Coupling reaction catalysts
oxidative, macromol. metal complexes as catalysts with improved stability
Amines, uses
tertiary, polymer bound complexes; macromol. metal complexes as catalysts with improved stability
101-02-0, polymer bound with rhodium amine complexes
288-32-4, polymer bound complexes with copper
7440-16-6, polymer bound phosphite complexes
7440-50-8, polymer bound tertiary amine complexes
macromol. metal complexes as catalysts with improved stability

122:58804
Catalysts for the epoxidation of alkenes using alkylhydroperoxide.
Sielcken, Otto Erik (DSM N.V., Neth.). PCT Int. Appl. WO 9404268 A1 3 Mar 1994, 17 pp. DESIGNATED STATES: W: AU, BB, BG, BR, BY, CA, CZ, FI, HU, JP, KP, KR, KZ, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA, US, VN; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: B01J031-16. APPLICATION: WO 93-NL172 16 Aug 1993. PRIORITY: NL 92-1482 20 Aug 1992. DOCUMENT TYPE: Patent CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
The catalysts useful for the conversion of C^{3}3 alkenes comprise an ion of ^{3}1 metal selected from Mo, W, Ti and V on an inorg. carrier, characterized in that the metal ion is bound to the carrier via a polydentate org. ligand. Stirring 250 g 3-aminopropyltrimethoxysilane and 100 g silica in 500 mL MeOH, washing the product with PhMe and treating (40 g) with 6.0 g salicylaldehyde in 100 mL 1:1 PhMe/EtOH gave a ligand-bound carrier, which was reacted with MoO2(acac)2 and reduced with NaBH4 to obtain a catalyst. Cyclohexene was epoxidized with tert-BuOOH using this catalyst at 60° for 210 min to give cyclohexene oxide with 99% conversion and 100% selectivity.

Keywords

epoxidn catalyst alkene alkylhydroperoxide
cyclohexene epoxidn catalyst molybdenum supported

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Epoxidation catalysts
Alkenes, reactions
catalysts for epoxidn. of alkenes using alkylhydroperoxide
Hydroperoxides
alkyl, catalysts for epoxidn. of alkenes using alkylhydroperoxide
90-02-8, reaction product with silica and silane and metal complex
7631-86-9, reaction product with silane and salicylaldehyde and metal complex
13822-56-5, reaction product with silica and salicylaldehyde and metal complex
17524-05-9, reaction product with silica and silane and salicylaldehyde
75-91-2
110-83-8, reactions
111-66-0
766-07-4
catalysts for epoxidn. of alkenes using alkylhydroperoxide

120:32410
Method for obtaining polymer carriers for gel-immobilized metal-complex catalyst systems.
Kabanov, V. A.; Smetanyuk, V. I.; Prudnikov, A. I.; Bobrov, A. P. (USSR). U.S.S.R. SU 1070880 A1 15 Nov 1992 From: Izobreteniya 1992, (42), 179. (Union of Soviet Socialist Republics). CODEN: URXXAF. CLASS: ICM: C08F255-06. ICS: C08F004-02. APPLICATION: SU 81-3357232 26 Nov 1981. DOCUMENT TYPE: Patent CA Section: 38 (Plastics Fabrication and Uses) Section cross-reference(s): 39, 67
To provide a carrier of the desired shape by a simplified process, an elastomer is ground, mixed with 10-30 wt.% of a complex-forming vinyl monomer or its salt and 1-2 wt.% vulcanizing agent, homogenized on a mill at 50-60° for 10-30 min, placed in a mold contg. a reinforcing agent, and pressed for 1-10 min at 150-175°/50-200 atm to induce grafting and crosslinking.

Keywords

grafting elastomer complexing agent
carrier manuf immobilized catalyst

Index Entries

Rubber, synthetic
Rubber, natural, reactions
grafting of, with complex-forming vinyl monomer, in catalyst carrier manuf.
Catalysts and Catalysis
immobilized metal, manuf. of polymeric carriers for
Polymer-supported reagents
metal catalysts, support manuf. for
Vulcanization
of elastomers with complex-forming vinyl monomers, grafting and
Polymerization
graft, of elastomers with complex-forming vinyl monomers, vulcanization and

119:226679
Polymerization of a-olefins by using catalysts based on alumina-supported mixts. of transition metal complexes and organometallic compounds.
Sugimoto, Ryuichi; Asanuma, Tadashi; Iwatani, Tsutomu (Mitsui Toatsu Chemicals, Japan). Jpn. Kokai Tokkyo Koho JP 05132516 A2 28 May 1993 Heisei, 5 pp. (Japan). CODEN: JKXXAF. CLASS: ICM: C08F010-00. ICS: C08F004-645. APPLICATION: JP 91-248859 27 Sep 1991. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers)

a-Olefins are polymd. by using catalyst components obtained by contacting (A) Al2O3 [no water content; surface area (sa) 15£sa£300 m2/g] with reaction products of (B) MABX2 (A, B = unsatd. hydrocarbon residue, X = C1-10 hydrocarbon residue, M = metal atom chosen from group 4 and 5 elements) or complexes I [A, B, X, M = same as above, R = (side chain-contg.) divalent linear hydrocarbon residue which may be substituted by Ge or Sn atom in linear C atoms] and (C) org. metal compds. Thus, 1.5 kg liq. propylene was polymd. at 50° for 2 h in presence of a catalyst prepd. from 40 mg isopropyl(cyclopentadienyl-1-fluorenyl)dimethylzirconium, 0.86 g AlEt3, and 1 g Aerosil Aluminum oxide L (heat-treated alumina; sa = 100 m2/g) to give 10 g polypropylene (corresponding to 1.1 kg polypropylene/1 g Zr) showing syndiotactic pentad fraction 0.73, intrinsic viscosity (h) 0.46, and ratio of wt. av. mol. wt./no. av. mol. wt.

2.6.

Keywords

olefin polymn catalyst aluminum oxide
isopropyl methyl zirconium catalyst polymn propylene
cyclopentadienyl fluorenyl zirconium catalyst polymn propylene
transition metal compd polymn catalyst
organometallic compd polymn catalyst

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Polymerization catalysts
alumina-transition metal complex-organometallic compd., for
a-olefins
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Group VB element compounds
complexes, catalysts, for polymn. of a-olefins
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a-, polymers, prepn. of, catalysts for
97-93-8, uses
1344-28-1, uses
112243-80-8
134366-83-9
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130817-78-6
lithiation of
130638-44-7
prepn. and methylation of
9003-07-0
9003-28-5
prepn. of, catalysts for
10026-11-6
reaction of, with lithiated isopropylcyclopentadienylfluorene

119:204111
Stereospecific polymerization of a-olefins.
Sugimoto, Ryuichi; Morita, Kyomi (Mitsui Toatsu Chemicals, Japan).
Jpn. Kokai Tokkyo Koho JP 05194636 A2 3 Aug 1993 Heisei, 5 pp.
(Japan). CODEN: JKXXAF. CLASS: ICM: C08F010-00. ICS:
C08F004-654. APPLICATION: JP 92-7367 20 Jan 1992.
DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic
High Polymers) Section cross-reference(s): 67
a-Olefins are polymd. with broad mol. wt. distribution in the presence of
a catalyst contg. a solid component obtained by supporting Ti halide on
Mg halide, an organometallic compd., ³1 chelate compd. of Group VIII
transition metal, and ³1 electron donor. Thus, propylene was polymd.
in heptane in the presence of a solid component (prepd. from MgCl2,
diisobutyl phthalate, and TiCl4), triisobutylaluminum,
cyclohexylmethyldimethoxysilane, Et3Al-treated Ni acetylacetonate, and
H at 70° to give polypropylene with intrinsic viscosity (in Decalin, 135°)
1.94, isotactic index 97.4%, and mol. wt. distribution 6.0.

Keywords

stereospecific polymn olefin catalyst
titanium halide olefin polymn catalyst
magnesium halide olefin polymn catalyst
electron donor olefin polymn catalyst
transition metal chelate polymn catalyst
broad mol wt distribution polyolefin

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Group VIII element compounds
chelates, catalysts, for stereospecific polymn. of a-olefins
Polymerization catalysts
Ziegler-Natta, aluminum-titanium-silane-transition metal complex, stereospecific, for a-olefins
Alkenes, polymers
a-, polymers, prepn. of, stereospecific, catalysts for
84-69-5
100-99-2, uses
3264-82-2
7550-45-0, uses
17865-32-6
catalysts, supported, for stereospecific polymn. of olefins
25085-53-4
prepn. of, with broad mol. wt. distribution, catalysts for

127:293687
Structure of some polydienes and polyolefins prepared with supported metal-complex catalysts.
Antipov, E. M.; Mushina, E. A.; Gavrilenko, I. F.; Shklyaruk, B. F.; Razumovskaya, I. V.; Kuptsov, S. A.; Podol'skii, Yu. Ya.; Gabutdinov, M. S. (Topchiev Inst. Petrochem. Synthesis, Russian Acad. Sci., Moscow 117912, Russia). Vysokomol. Soedin., Ser. A Ser. B, 39(4), 639-649 (Russian) 1997 MAIK Nauka CODEN: VSSBEE. ISSN: 1023-3091.
DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 36, 39
The structure, phase compn., and temp.-mediated behavior of polybutadienes prepd. with binuclear metal complex systems immobilized on a solid support were studied. It was found that polybutadienes of nascent structure are a mixt. of trans-1,4- and cis-1,4-homopolymers, whereas 1,2-units are randomly distributed in macromols. of trans-1,4-polybutadiene. It was shown that, in principle, the nascent trans-1,4-polybutadiene exhibits a three-phase structure and contains cryst. and amorphous phases and a low-temp. form of the mesomorphic phase component.

Keywords

microstructure polyolefin binuclear polymn catalyst
macrostructure polyethylene binuclear polymn catalyst
conformation polybutadiene titanium magnesium zirconium catalyst
morphol polyolefin titanium magnesium zirconium catalyst
crystallinity polybutadiene titanium magnesium zirconium catalyst

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Polymerization catalysts
binuclear; structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts
Crystallinity
Phase transition enthalpy
Polymer chain conformation
Polymer morphology
1,2-Butadiene rubber
Butadiene rubber, preparation
cis-1,4-Butadiene rubber
structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts
9003-17-2
1,2-Butadiene rubber, structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts
9003-17-2

butadiene rubber, structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts
100-99-2, uses
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7786-30-3, uses
precursor; structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts
1586-92-1
1624-02-8
7439-95-4, uses
7440-02-0, uses
7440-32-6, uses
7440-67-7, uses
9002-88-4
9003-17-2
25087-34-7
structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts
7631-86-9, uses
support; structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts
9003-17-2
cis-1,4-Butadiene rubber, structure of some polydienes and polyolefins prepd. with supported metal-complex catalysts

127:95733
Supported polymerization catalyst containing tethered cation forming activator.
Carnahan, Edmund M.; Carney, Michael J.; Neithamer, David R.; Nickias, Peter N.; Shih, Keng-yu; Spencer, Lee (The Dow Chemical Company; W.R. Grace and Co.-Conn.; Carnahan, Edmund M.; Carney, Michael J.; Neithamer, David R.; Nickias, Peter N.; Shih, Keng-Yu; Spencer, Lee, USA). PCT Int. Appl. WO 9719959 A1 5 Jun 1997, 43 pp. DESIGNATED STATES: UZ, W AM, W AZ, W BY, W KG, W KZ, W MD, W RU, W TJ, W TMDE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-603. ICS: C08F010-00. APPLICATION: WO 96-US17140 25 Oct 1996. PRIORITY: US 95-7609 27 Nov 1995. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
A polymn. catalyst support comprises the reaction product of: (A) an inorg. oxide material having reactive surface hydroxyl groups, at least some of which optionally having been functionalized and converted to a reactive OSiR2H group (R = H, C1-20 hydrocarbyl, or C1-20 hydrocarbyloxy), (<1.0 mmol of reactive surface hydroxyl functionality per g); and (B) an activator compd. comprising: (b1) a cation which is capable of reacting with a transition metal compd. to form a catalytically active transition metal complex and (b2) a compatible anion contg. at least one substituent able to react with the inorg. oxide, with the residual hydroxyl functionality of the inorg. oxide or with the reactive silane moiety thereby covalently bonding the compatible anion to the support. This support is useful for transition-metal compd. catalysts contg. $^{3}1$ p-bonded anionic ligand. These supported catalysts exhibit high efficiencies in slurry and gas polymn. of olefins and provide polymers with improved bulk d. A typical support was manufd. by stirring an ether slurry of PhSiH3-treated silica 15 h with an ether soln. of dimethylanilinium

[4-(4-hydroxyphenyl)phenyl]tris(pentafluorophenyl)borate.

Keywords

olefin polymn catalyst supported transition metal
anilinium hydroxyphenyl fluorophenylborate treated silica catalyst
silica phenylhydrosilane treated support polymn catalyst
bulk density enhanced polyolefin manuf catalyst
hydrosilane treated support olefin polymn catalyst

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Methyl aluminoxanes
cocatalyst; supported catalyst contg. tethered cation-forming activator in support for polymn. of olefins
Silanes
hydro-, support pretreatments; supported catalyst contg. tethered cation-forming activator in support for polymn. of olefins
Group IVB element compounds
metallocenes, catalysts; supported catalyst contg. tethered cation-forming activator in support for polymn. of olefins
Polymerization catalysts
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191848-50-7
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886-65-7
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12148-49-1
12636-72-5
73364-10-0
112243-78-4
135072-61-6
135072-62-7
169104-71-6
191848-51-8
1291-32-3
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97-93-8, uses
100-99-2, uses
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542-91-6
694-53-1
766-08-5
775-12-2
15933-59-2
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17878-44-3
79054-25-4
191848-35-8
191848-37-0
191848-40-5

191848-43-8
191848-47-2
106-41-2
999-97-3
1109-15-5
5882-44-0
29558-77-8
91270-68-7
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1318-23-6
7631-86-9, uses
support; supported catalyst contg. tethered cation-forming activator in support for polymn. of olefins
9002-88-4
25087-34-7
25213-02-9
26221-73-8
supported catalyst contg. tethered cation-forming activator in support for polymn. of olefins

127:19360
Surfactant-supported dyeing of wool using 1:1 metal complex dyes at low temperatures.
Holz, Joachim; Kramer, Claudia; Wolf, Klaus (Deutsches Wollforschungsinstitut e.V., RWTH, Aachen, Germany). DWI Rep., 119(Aachener Textiltagung Aachen Textile Conference, 1996), 466-474 (German) 1997 Deutsches Wollforschungsinstitut an der Technischen Hochschule Aachen CODEN: DWIREC. DOCUMENT TYPE: Journal CA Section: 40 (Textiles and Fibers)
Several surfactants allowed dyeing of wool with 1:1 metal complex dyes at higher pH (3.0), lower temp. (80°), and shorter dyeing times (30-60 min. shorter) than in the absence of surfactant.

Keywords

wool dyeing metal complex surfactant aid

Index Entries

Ethoxylated alcohols
C9-11, Dobanol 91-6; surfactant effects on dyeing of wool using 1:1 metal complex dyes at low temps.
Polyoxyalkylenes, uses
ether and amine derivs.; surfactant effects on dyeing of wool using 1:1 metal complex dyes at low temps.
Amines, uses
soya alkyl, ethoxylated, Ethomeen S 25; surfactant effects on dyeing of wool using 1:1 metal complex dyes at low temps.
Cationic surfactants
Dyeing
Nonionic surfactants
Wool
surfactant effects on dyeing of wool using 1:1 metal complex dyes at low temps.
25322-68-3, ether and amine derivs.
37191-38-1
190395-93-8
surfactant effects on dyeing of wool using 1:1 metal complex dyes at low temps.

126:162742
Alternative supported aqueous-phase catalyst systems.
Toth, Imre; Guo, Ipin; Hanson, Brian E. (Department of Chemistry, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, USA). J. Mol. Catal. A: Chem., 116(1-2), 217-229 (English) 1997 Elsevier CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 23, 45
The concept of supported aq.-phase (SAP) catalysis has been extended to olefin hydroformylations by the use of in situ formed Rh-, Pt-SnCl3- and Co-complexes contg. HexDPPDS, TAPTS and TPrPTS as ligands, resp. (HexDPPDS = hexyl-bis(sodium-m-sulfonatophenyl)phosphine; TAPTS = tris(w-(sodium-p-sulfonatophenyl)alkyl)phosphines, where alkyl = CH2, TBeTS; =C2H4, TEtPTS, =C3H6, TPrPTs). Furthermore, some data are reported on the SAP asym. hydroformylation of styrene by the use of PtCl2[(S,S)-BDPP-((p-NMe3)(BF4))4]+SnCl2 system and on the SAP asym. hydrogenation of dehydro-phenylalanine derivs. with Rh(COD)[(S,S)-BDPP-(p-NMe3)4](BF4)5 and Rh(COD)[(S,S)-Chiraphos-(p-NMe3)4](BF4)5 complexes. (BDPP = 2,4-bis(diphenylphosphino)pentane; Chiraphos = 2,3-bis(diphenylphosphino)butane). For the sake of comparison, the two-phase catalytic results are also given with each alternative SAP catalytic applications, as well as the appropriate (org.) homogeneous values, which were obtained with the analogous complexes contg. the resp. non-functionalized ligands. With the exception of the Co-system, the SAP catalytic systems show similar selectivity only to the analogous non-aq. catalysts. The anomalous behavior of the Co-system in the presence of water is attributed to the presence of sulfonate groups on the ligand which may interact with the cobalt.

Keywords

supported aq phase catalyst system
olefin hydroformylation catalyst transition metal complex
asym hydrogenation dehydrophenylalanine transition metal complex
styrene hydroformylation catalyst transition metal complex
Group VIII metal complex hydroformylation hydrogenation

Index Entries

Hydroformylation catalysts
Stereoselective hydrogenation catalysts
alternative supported aq.-phase catalyst systems
Group VIII element complexes
bimetallic; alternative supported aq.-phase catalyst systems
Alkenes, reactions
hydroformylation of; alternative supported aq.-phase catalyst systems
7650-89-7
7772-99-8, uses
10210-68-1
14874-82-9
50701-20-7
63995-70-0
95704-32-8
132694-05-4
145702-43-8
179092-97-8
186884-69-5
186884-71-9
186884-74-2
186884-75-3
186884-76-4

186884-77-5
186884-78-6
186884-73-1
18298-00-5
145702-39-2
145702-41-6
145702-45-0
186884-72-0
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21462-02-2
60676-51-9
asym. hydrogenation of; alternative supported aq.-phase catalyst systems
100-42-5, reactions
111-66-0
112-41-4
872-05-9
hydroformylation of; alternative supported aq.-phase catalyst systems

126:344445
Tenside-supported acceleration of 1:2-metal complex dyeing of combed top. TEM study for visual approach of morphological changes during sorption and diffusion of dyes.
Wolf, Klaus; Phan, Kim Ho; Kramer, Claudia; Engering, Robert; Hocker, Hartwig (Deutsches Wollforschungsinstitut e.V., RWTH, Aachen, Germany). DWI Rep., 119(Aachener Textiltagung Aachen Textile Conference, 1996), 636-647 (German) 1997 Deutsches Wollforschungsinstitut an der Technischen Hochschule Aachen
CODEN: DWIREC. DOCUMENT TYPE: Journal CA Section: 40 (Textiles and Fibers)
Morphol. changes within the fiber areas of wool which are relevant for sorption and diffusion of dyes were studied by transmission electron microscopy. The morphol. changes were induced by application of relatively high tenside concns. (0.7-1.4%) under dyeing conditions with surface-active or surface-inactive 1:2 metal complex dyes. The sorption of dyes or surfactants was accelerated by morphol. changes within the cuticula-cellular membrane complex-adsorption zone or within the main diffusion path endocuticula and did not depend on the cortex penetration capacity.

Keywords

wool surfactant metal complex dye uniformity

Index Entries

Dyeing
Sorption
Wool
color uniformity in surfactant-supported metal complex dyeing of wool
Amines, uses
soya alkyl, ethoxylated; color uniformity in surfactant-supported metal complex dyeing of wool
865-47-4
37191-38-1
color uniformity in surfactant-supported metal complex dyeing of wool

126:9446

CO2 hydrogenation over SiO2-supported Pt-M and Rh-M heterobinuclear metal complex catalysts.
Shao, Changping; Yang, Xiuzhi; Wang, Jeyu (Dalian Institute of Chemical Physics, The Chinese Academy of Sciences, Dalian 116023, Peop. Rep. China). Fenzi Cuihua, 10(5), 363-367 (Chinese) 1996 Zhongguo Kexueyuan Lanzhou Huaxue Wuli Yanjiuso. CODEN: FECUEN. ISSN: 1001-3555. DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 29, 51, 67
The SiO2-supported heterobinuclear metal complexes, (PPh3)2HPt(m-CO) (m-PPh2)M(CO)4 and (dppe) Rh (m-CO)2M (CO)3 (M = Cr, Mo, W; dppe = Ph2PCH2CH2PPh2), as catalysts for CO2 hydrogenation were reported. Both catalysts exhibited high catalytic activity and selectivity, with Pt-M/SiO2 being higher. The hydrogenation of coordinated CO in the supported complexes of these catalysts was also investigated. The FTIR spectra of supported complex catalysts of Pt-W/SiO2 and Rh-W/SiO2 catalysts were recorded under hydrogen atm. at 160-240°. The catalytic active species are related to the original complex.

Keywords

carbon dioxide hydrogenation heterobinuclear metal catalyst
silica supported hydrogenation heterobinuclear metal catalyst
platinum carbon dioxide hydrogenation catalyst
chromium carbon dioxide hydrogenation catalyst
molybdenum carbon dioxide hydrogenation catalyst
tungsten carbon dioxide hydrogenation catalyst
rhodium carbon dioxide hydrogenation catalyst

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Hydrogenation catalysts
CO2 hydrogenation over SiO2-supported Pt-M and Rh-M heterobinuclear metal complex catalysts
7631-86-9, uses
158371-11-0
160118-82-1
160118-83-2
167224-88-6
167224-89-7
167224-90-0
124-38-9, reactions
CO2 hydrogenation over SiO2-supported Pt-M and Rh-M heterobinuclear metal complex catalysts

127:121519
Combination Catalysts Consisting of a Homogeneous Catalyst Tethered to a Silica-Supported Palladium Heterogeneous Catalyst: Arene Hydrogenation.
Gao, Hanrong; Angelici, Robert J. (Department of Chemistry, Iowa State University, Ames, IA 50011, USA). J. Am. Chem. Soc., 119(29), 6937-6938 (English) 1997 American Chemical Society CODEN: JACSAT. ISSN: 0002-7863. DOCUMENT TYPE: Journal CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
A new type of heterogeneous catalyst prepd. by tethering a homogeneous transition metal complex to the silica surface of a heterogeneous silica-supported metal catalyst exhibits exceptionally high activity for the hydrogenation of arenes to their corresponding cyclohexanes. The particular TCSM (tethered complex on supported metal) catalyst consisting of RhCl[CN(CH2)3Si(OEt)3]3 tethered to silica-supported Pd (10%) catalyzes the hydrogenation (1 atm) of toluene to methylcyclohexane at 40° with a turnover no. of 2420 mol

H2/mol Rh during an 8.5 h time period. This activity, which is substantially higher than that of the tethered complex or the Pd-SiO2 sep., establishes a cooperative functioning of both components of the TCSM catalyst. When used in 3 successive reactions over a total time of 82.5 h, the activity of the catalyst remains undiminished, which indicates that the Rh does not leach from the tether. The concept of TCSM catalysts could, in principle, incorporate a wide range of tethered homogeneous catalysts and supported metals to catalyze a variety of reactions.

Keywords

rhodium complex tethered palladium silica catalyst
hydrogenation arene tethered complex supported metal

Index Entries

Hydrogenation catalysts
Aromatic hydrocarbons, reactions
homogeneous catalyst tethered to a silica-supported palladium heterogeneous catalyst in arene hydrogenation
7440-05-3, uses
192821-79-7, reaction product with palladium/silica
192821-80-0, reaction product with palladium/silica
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93-58-3
100-66-3, reactions
101-81-5
101-84-8
108-88-3, reactions
12092-47-6
14523-22-9
76514-38-0
91-17-8
108-87-2
119-64-2
931-56-6
2206-38-4
3178-23-2
4410-75-7
4630-82-4
4645-15-2
homogeneous catalyst tethered to a silica-supported palladium heterogeneous catalyst in arene hydrogenation

127:86691
The decomposition of H2O2 catalyzed by polymer supported transition metal complexes.
Selvaraj, P. C.; Mahadevan, V. (Department of Chemistry, Indian Institute of Technology, Madras 600 036, India). J. Mol. Catal. A: Chem., 120(1-3), 47-54 (English) 1997 Elsevier CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 35, 38
The synthesis and use of nitrogen-contg. copolymers for anchoring Ru(II) and Rh(I) species is described. The supported species are effective as catalysts for the decompn. of H2O2 in aq. medium at neutral pH. The polymers as well as the supported catalysts have been characterized by phys. and chem. methods. The effects of [H2O2], catalyst loading and pH of the medium on the rate of decompn. have been studied. Suitable mechanisms have been proposed to account for the kinetics. Recycling efficiencies of the catalysts are found to be good.

Keywords

hydrogen peroxide decompn transition metal catalyst
polymer supported transition metal complex catalyst
ruthenium complex polymer supported catalyst
rhodium complex polymer supported catalyst

Index Entries

Decomposition catalysts
Decomposition kinetics
decompn. of H2O2 catalyzed by polymer supported transition metal complexes
10049-07-7
10049-08-8
15746-57-3
75944-25-1
191863-94-2
185117-60-6
7722-84-1, reactions
decompn. of H2O2 catalyzed by polymer supported transition metal complexes

126:225606
Study on polymer-supported rare earth metal complexes. XVI. Structural factors of polymer and catalytic activity of polymer-supported metal complex.
Zheng, Wenzhi; Li, Yuliang; Yu, Guangqian; Li, Xiaoli (Changchun Inst. Appl. Chem., Chinese Acad. Sci. 130022, Peop. Rep. China).
Hecheng Xiangjiao Gongye, 20(1), 17-20 (Chinese) 1997 Lanzhou Huaxue Gongye Gongsi Huagong Yanjiuyuan CODEN: HXGOEA.
ISSN: 1000-1255. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 38, 67
A series of acrylamide-styrene copolymer (I)-supported neodymium complexes with different contents of Nd was prepd. The relation between the sequence distribution of the monomeric units in I and the catalytic activity of I-NdCl3 was investigated. The I-NdCl3 had optimum catalytic activity for polymn. of butadiene only when the distributions of short sequences of acrylamide units (n = 1) and long sequences of styrene units ($n^3$25) were both higher. The microstructure of polybutadiene obtained was not dependent on the distribution of the monomeric units in I. The use of acrylamide-propylene graft copolymer as support for NdCl3 gave lower catalytic activity compared with the use of I as support.

Keywords

polymer supported neodymium catalyst polymn butadiene
acrylamide styrene copolymer supported catalyst
sequence distribution styrene copolymer catalyst support
propylene graft copolymer support catalyst
polybutadiene prepn catalyst polymer supported

Index Entries

Polymer chain sequence distribution
Polymerization catalysts
Polymer-supported reagents
sequence distribution and catalytic activity of acrylamide-styrene copolymer as supports for NdCl3 catalyst for polymn. of butadiene

100-99-2, uses
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9003-17-2
of 1,4-configuration; sequence distribution and catalytic activity of acrylamide-styrene copolymer as supports for NdCl3 catalyst for polymn. of butadiene
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24981-13-3
sequence distribution and catalytic activity of acrylamide-styrene copolymer as supports for NdCl3 catalyst for polymn. of butadiene
109997-76-4
supports for NdCl3 catalyst; catalytic activity of

126:143759
Catalytic action of organic macromolecule-supported metal complexes.
Ebitani, Kohki (Osaka Univ., Toyonaka 560, Japan). Shokubai, 38(8), 659-660 (Japanese) 1996 Shokubai Gakkai CODEN: SHKUAJ. ISSN: 0559-8958. DOCUMENT TYPE: Journal; General Review CA Section: 21 (General Organic Chemistry) Section cross-reference(s): 67
A review with 10 refs. on the titled catalytic actions such as olefin hydroformylation with Rh compd. immobilized to poly(arylene ether triaryl phosphine), asym. epoxidn. of styrene by m-chloroperbenzoic acid with (salen)Mn(III) bound to styrene-divinylbenzene copolymer, selective hydrogenation of a,b-unsatd. aldehydes to the corresponding unsatd. alcs. over polystyrene-supported Rh carbonyl complex, selective redn. of arom. nitro groups by CO-H2O with Rh carbonyl complex immobilized to aminated polystyrene.

Keywords

polymer supported metal complex catalyst review

Index Entries

Catalysts
Polymer-supported reagents
catalytic action of org. macromol.-supported metal complexes
Metals, uses
polymer-supported; catalytic action of org. macromol.-supported metal complexes

127:351644
The uses of polynuclear metal complexes to develop designed dispersions of supported metal oxides: Part II. Catalytic properties.
Van Der Voort, Pascal; Baltes, Michael; Vansant, Etienne F.; White, Mark G. (Laboratory of Inorganic Chemistry, University of Antwerp (U.I.A.), Wilrijk B-2610, Belg.). Interface Sci., 5(2/3), 199-206 (English) 1997 Kluwer CODEN: INSCE9. ISSN: 0927-7056. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 78
A review with 23 refs.; in many catalytic reactions, the configuration, dispersion and ensemble size of the supported catalytic species have a significant impact on the activity, selectivity and product distribution of the catalyst. By using the method of mol. design, it becomes possible

to fundamentally optimize these catalytic reactions, eliminating side reactions and improving the activity or selectivity of the catalyst, provided that the detailed reaction mechanisms and the structural dependencies are known. In this manuscript, several examples are presented that illustrate the dramatic effect of the ensemble size of the supported catalytic species on the catalytic behavior. It is evidenced how supported metal oxides may be prepd. to have quite different catalytic properties.

Keywords

polynuclear metal complex oxide catalyst review

Index Entries

Catalysts
Oxides (inorganic), uses
Coordination compounds
uses of polynuclear metal complexes to develop designed dispersions of supported metal oxides and catalytic properties

127:190297
Immobilization [of metal complex catalysts].
Panster, Peter; Wieland, Stefan (Germany). Appl. Homogeneous Catal. Organomet. Compd., Volume 2, 605-623. Edited by: Cornils, Boy; Herrmann, Wolfgang A. VCH: Weinheim, Germany. (English) 1996. CODEN: 64VPAG. DOCUMENT TYPE: Conference; General Review CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
A review with 104 refs.

Keywords

review metal complex catalyst immobilization

Index Entries

Catalyst supports
Catalysts
Polymer-supported reagents
Coordination compounds
immobilization of metal complex catalysts

126:75334
Manufacture of supported metal catalysts for dechlorination of chloroalkanes to alkenes.
Delhez, Patrice; Heinrichs, Benoit; Pirard, Jean-Paul; Schoebrechts, Jean-Paul (Solvay et Cie., Belg.). Eur. Pat. Appl. EP 745426 A1 4 Dec 1996, 9 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT, NL. (European Patent Organization). CODEN: EPXXDW. CLASS: ICM: B01J037-03. ICS: B01J023-48. APPLICATION: EP 96-201330 14 May 1996. PRIORITY: BE 95-468 24 May 1995. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 23, 67
Catalysts providing high selectivity and yield in the title process are manufd. by hydrolysis of a mixt. contg. alkoxide precursor for an oxide support, a complex of a Group VIII metal compd. and A(CHR2)aSi(OR1)3 (I, A = electron donor group for complexing with Group VIII metal, R1 = C1-8 alkyl, R2 = H or C1-4 alkyl, a = 0-8), and a complex of a Group IB metal compd. and B(CHR2)aSi(OR1)3 (B =

electron donor group for complexing with Group IB metal, a, R1, R2 = same as in I) in a solvent and drying the resulting gel. These dried gels are optionally calcined.

Keywords

supported metal compd gel catalyst dechlorination
silicon metal complex gel catalyst dechlorination
alkene manuf chloroalkane dechlorination catalyst

Index Entries

Dechlorination catalysts
Gels
Xerogels
Amino silanes
Group IB elements
Group VIII elements
Alkenes, preparation
Chloro alkanes
manuf. of supported metal catalysts for dechlorination of chloroalkanes to alkenes
Oxides (inorganic), uses
supports; manuf. of supported metal catalysts for dechlorination of chloroalkanes to alkenes
78-10-4
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7440-05-3, uses
7440-22-4, uses
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74-85-1, preparation
115-07-1, preparation
78-87-5
107-06-2, reactions
manuf. of supported metal catalysts for dechlorination of chloroalkanes to alkenes

127:278591
Manufacture of polyethylene using supported metallocene catalysts. Kishine, Masahiro; Watanabe, Keiji; Yano, Katsunori; Tsutsui, Toshiyuki (Mitsui Petrochemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09235312 A2 9 Sep 1997 Heisei, 12 pp. (Japan). CODEN: JKXXAF. CLASS: ICM: C08F004-642. ICS: C08F010-02. APPLICATION: JP 96-50460 7 Mar 1996. PRIORITY: JP 95-108480 2 May 1995; JP 95-339667 26 Dec 1995. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers)

A supported metallocene catalyst system comprising (1) transition metal complex I (M = IV-VIB group metal; R1-4 = H, halogen, C1-20 hydrocarbyl, C1-20 halogenated hydrocarbyl, Si-contg. group, O-contg. group, S-contg. group, N-contg. group, P-contg. group, a ring formed by combining with an adjacent group; X1, X2 = H, halogen, C1-20 hydrocarbyl, C1-20 halogenated hydrocarbyl, O-contg. group, S-contg. group; Y = bivalent Si-contg. group, bivalent Ge-contg. group), (2) a metallocene-activating agent selected from organoaluminum compds., org. aluminumoxy compds., and compds. which form ion pair with metallocenes, and (3) a fine particular support is used to manuf. polyethylene with d. 0.900-0.985 g/cm3, melt flow rate (MFR) 0.001-3000 g/10 min at 190° under 2.16 kg load, and diam. swell ratio >1.35 and satisfying $\log[MT]^3-0.4\log[MFR] + 0.70$ where MT is melt tension.

Keywords

polymn catalyst metallocene support polyethylene manuf

Index Entries

Polymerization catalysts
Methyl aluminoxanes
manuf. of polyethylene using supported metallocene catalysts
100-99-2, uses
7631-86-9, uses
119821-97-5
149342-08-5
158515-16-3
9002-88-4
manuf. of polyethylene using supported metallocene catalysts

126:48095
Catalase-like activity of divinylbenzene (DVB)-crosslinked polyacrylamide supported amino metal complexes.
Jose, Lissy; Pillai, V. N. Rajasekharan (Sch. Chem. Sci., Mahatma Gandhi Univ., Kerala 560, India). Eur. Polym. J., 32(12), 1431-1435 (English) 1996 Elsevier. CODEN: EUPJAG. ISSN: 0014-3057.
DOCUMENT TYPE: Journal CA Section: 38 (Plastics Fabrication and Uses) Section cross-reference(s): 67
The catalytic properties of the complexes resulting from the interaction between a DVB-crosslinked polyacrylamide supported amine and Cu(II), Cr(III), Fe(III) and Pb(II) ions have been investigated. The study of hydrogen peroxide decompn. was employed as a model reaction for this purpose. The phenomenol. aspects of this process such as time-course, dependence of H2O2 concn., complex conch., temp. and pH were evaluated. The activation energy of decompn. was calcd. to be 16.35 kJ/mol. The results indicate a catalase-like activity for these metal complexes.

Keywords

crosslinked polyacrylamide supported amino metal complex
divinylbenzene crosslinked polyacrylamide complex catalyst
catalyst hydrogen peroxide decompn polyacrylamide supported
kinetics decompn hydrogen peroxide

Index Entries

Decomposition catalysts
Decomposition kinetics
catalase-like activity of amine group-contg. acrylamide-divinylbenzene copolymer-metal complexes for decompn. of hydrogen peroxide
7722-84-1, complexes with amine group-contg. acrylamide-divinylbenzene copolymer
catalase-like activity of amine group-contg. acrylamide-divinylbenzene copolymer-metal complexes for decompn. of hydrogen peroxide
7439-89-6, complexes with amine group-contg. acrylamide-divinylbenzene copolymer
7439-92-1, complexes with amine group-contg. acrylamide-divinylbenzene copolymer
7439-96-5, complexes with amine group-contg. acrylamide-divinylbenzene copolymer
7440-47-3, complexes with amine group-contg. acrylamide-divinylbenzene copolymer

7440-50-8, complexes with amine group-contg.
acrylamide-divinylbenzene copolymer
61722-10-9, reaction products with ethylenediamine, metal complexes
catalysts; catalase-like activity for decompn. of hydrogen peroxide

127:248567
Metal-containing polymeric particles with long-lasting antibacterial and antifungal activities, and manufacture thereof.
Nishida, Ryosuke (Japan Exlan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09216911 A2 19 Aug 1997 Heisei, 11 pp. (Japan). CODEN: JKXXAF. CLASS: ICM: C08F008-44. APPLICATION: JP 96-48234 8 Feb 1996. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 37, 40, 42
Title particles with ³0.1% Ag, Cu, and/or Zn content, useful for coatings, fibers, films, polymers, etc., are manufd. by ion exchange or coordination of polar groups of crosslinked polymers with Ag, Cu, and/or Zn, then treatment with ligands and/or redn. to ppt. corresponding metal (complexes) with particle size £100 nm. Thus, acrylonitrile-hydrazine-methacrylic acid-Me acrylate-Na p-styrenesulfonate copolymer was hydrolyzed with aq. NaOH to give carboxylate group-contg. crosslinked polymer, which was added to aq. AgNO3 soln. The obtained Ag+-exchanged polymer was treated with Na oxalate at 80° for 2 h in H2O, treated at 170° for 2 h, then treated with aq. benzalkonium chloride soln. to give Ag-supported benzalkonium ion-exchanged polymer particles. The particles showed good antibacterial and antifungal activities.

Keywords

antibacterial antifungal silver copper zinc polymer
metal complex formation polymer antibacterial
hydrolyzed polyacrylonitrile silver supported manuf antibacterial
benzalkonium exchanged crosslinked polymer particle antibacterial
coating fiber film antibacterial polar polymer

Index Entries

Antibacterial agents
Fungicides
industrial; manuf. of metal-contg. polar polymer particles with long-lasting antimicrobial activities for coatings, fibers, and films
Coatings
Natural fibers
Synthetic polymeric fibers, miscellaneous
manuf. of metal-contg. polar polymer particles with long-lasting antimicrobial activities for coatings, fibers, and films
Alkylbenzyldimethylammonium chlorides
reaction product with hydrolyzed acrylonitrile copolymer; manuf. of metal-contg. polar polymer particles with long-lasting antimicrobial activities for coatings, fibers, and films
1121-31-9, reaction product with hydrolyzed acrylonitrile copolymer
1838-08-0, reaction product with hydrolyzed acrylonitrile copolymer
7440-22-4, preparation
7440-50-8, preparation
7440-66-6, preparation
533-51-7
10102-90-6
7440-66-6, complexes
195059-94-0, hydrolyzed
195059-95-1, hydrolyzed
195059-95-1
195059-96-2, hydrolyzed

79620-28-3
195459-83-7
195459-84-8
manuf. of metal-contg. polar polymer particles with long-lasting antimicrobial activities for coatings, fibers, and films

126:186533
Modified Ziegler catalysts for polymerization of olefins.
Soga, Kazuo; Uozumi, Tosha; Suzuki, Yoshiji (Tosoh Corp, Japan).
Jpn. Kokai Tokkyo Koho JP 09012624 A2 14 Jan 1997 Heisei, 7 pp.
(Japan). CODEN: JKXXAF. CLASS: ICM: C08F004-658. ICS:
C08F010-00. APPLICATION: JP 96-41094 28 Feb 1996. PRIORITY:
JP 95-103619 27 Apr 1995. DOCUMENT TYPE: Patent CA Section:
35 (Chemistry of Synthetic High Polymers)
A modified Ziegler-Natta catalyst system for producing highly stereoregular polymers of C2-10 olefins comprises a solid catalyst component consisting of transition metal complex CpMX3, which does not tend to form a cluster, [Cp = (substituted) cyclopentadienyl, indenyl, fluorenyl, their derivs; M = Ti, Zr, Hf; X = H, halo, C1-12 hydrocarbyl] supported on Mg halides, an organoaluminum compd., and an external electron donor. Thus, propylene was polymd. at 40° for 1 h in heptane in the presence of 2 mmol Al(iso-Bu)3, 0.37 mmol Et benzoate, and 0.148 mmol (as Ti) indenyltitanium trichloride supported on MgCl2 (Ti 0.074 mm/1 g MgCl2) to give polypropylene with catalyst activity 26.0 kg/mol. Ti-h, no.-av. mol. wt. 1.31 ´ 104, mol. wt. distribution 4.61, and heptane-insol. fraction 86.9%.

Keywords

stereoregularity polypropylene manuf Ziegler catalyst
polyolefin manuf Ziegler catalyst
magnesium chloride polymn catalyst support
indenyltitanium trichloride olefin polymn catalyst
triisobutylaluminum olefin polymn catalyst Ziegler

Index Entries

Polyolefins
modified Ziegler catalysts for polymn. of olefins
Ziegler-Natta polymerization catalysts
modified; modified Ziegler catalysts for polymn. of olefins
7786-30-3, uses
catalyst supports; modified Ziegler catalysts for polymn. of olefins
93-89-0
93-99-2
780-69-8
electron donors; modified Ziegler catalysts for polymn. of olefins
100-99-2, uses
84365-55-9
159861-04-8
9003-07-0
modified Ziegler catalysts for polymn. of olefins

126:74476
A new type of heterogeneous catalyst for allylic alkylation reactions.
Wang, Guo-Zhi; Augustine, Robert L. (Dep. of Chemistry, Seton Hall University, South Orange, NJ 07079, USA). Chem. Ind. (Dekker), 68(Catalysis of Organic Reactions), 429-433 (English) 1996 Dekker
CODEN: CHEIDI. ISSN: 0737-8025. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds)
A new type heterogeneous catalyst has been prepd. by immobilizing a

transition metal complex on an inert supported metal with the interaction between the catalytic species and the supported metal being a metal-metal bond resembling those present in metal clusters. Preliminary studies have involved a palladium catalyzed allylic alkylation which was run using PdCl(h3-C3H5)(PAr3) immobilized on Pt/Al2O3. It was found that the Pd(PAr3) species was attached to the platinum, and that the Ar3P-Pd-Pt bonds are retained during the catalytic process. This catalyst was less air-sensitive than the corresponding homogeneous catalyst, and for the allylation reactions, it could be repeatedly used three times without a significant loss of its reaction capability.

Keywords

heterogeneous catalyst allylic alkylation reaction

Index Entries

Alkylation catalysts
allylic; heterogeneous catalyst for allylic alkylation reactions
Transition metal complexes
heterogeneous catalyst for allylic alkylation reactions
7440-06-4, uses
102428-53-5, derivs.
628-08-0
18424-76-5
61979-92-8
82545-71-9
heterogeneous catalyst for allylic alkylation reactions

127:293767
Allyl containing metal complexes and olefin polymerization process. Nickias, Peter N.; Devore, David D.; Timmers, Francis J. (Dow Chemical Company, USA). PCT Int. Appl. WO 9735894 A2 2 Oct 1997, 32 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-64. ICS: C08F004-642; C08F010-00. APPLICATION: WO 97-US12821 11 Mar 1997. PRIORITY: US 96-14285 27 Mar 1996. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67

The title metal complexes have the structure I or are a dimer, solvated adduct, chelated deriv. or mixt., where L = cyclic group or Y, that is bound to M by a delocalized p-bond, the group contg. £50 nonhydrogen atoms; M = Group 3, 4 or Lanthanide metal; Z = covalently bound, divalent substituent of £50 nonhydrogen atoms (ER2)m, where E = C, Si or Ge, R = hydrocarbyl, hydrocarbyloxy, silyl, and germyl contg. £20 atoms other than H, and m = 1-3; Y = allyl or hydrocarbyl-, silyl- or germyl-substituted allyl group contg. £20 nonhydrogen atoms bonded to Z and bonded via an h3-p bond to M; X1 = neutral ligand of £20 nonhydrogen atoms; X2 = monovalent, anionic moiety selected from hydride, halo, hydrocarbyl, silyl, germyl, hydrocarbyloxy, amide, siloxy, halohydrocarbyl, halosilyl, silylhydrocarbyl, and aminohydrocarbyl having £20 nonhydrogen atoms, or 2 X2 groups together form a divalent hydrocarbadiyl group; n = 0-3; and p = 0-2. The catalyst may be activated by cocatalyst such as Me aluminoxane. Thus ethylene and 1-octene were polymd. in the presence of

(pentamethylcyclopentadienyl)(1,2,3-trimethylallyl)zirconium dibromide (activated with Me aluminoxane) in alkanes at 140° to give a copolymer.

Keywords

ethylene octene copolymer manuf
zirconium complex polymn catalyst olefin
lanthanide complex polymn catalyst olefin
allyl contg metal complex polymn catalyst
constrained geometry polymn catalyst
cyclopentadienyl trimethylallyl zirconium dibromide polymn catalyst

Index Entries

Methyl aluminoxanes
cocatalyst; allyl-contg. metal complexes for olefin polymn.
Polymerization catalysts
constrained geometry, (supported); allyl-contg. metal complexes for olefin polymn.
Metallocenes
open sandwich; allyl-contg. metal complexes for olefin polymn.
109959-71-9
26221-73-8
allyl-contg. metal complexes for olefin polymn.

127:253391
Pyramidality effect on metal-metal single bonds.
Aullon, Gabriel; Alvarez, Santiago (Dep. de Quim. Inorg., Univ. de Barcelona, Barcelona 08028, Spain). J. Chem. Soc., Dalton Trans., (15), 2681-2687 (English) 1997 Royal Society of Chemistry CODEN: JCDTBI. ISSN: 0300-9246. DOCUMENT TYPE: Journal CA Section: 65 (General Physical Chemistry)
A structural database study has been made of the transition metal compds. M2X8Ln with metal-metal single bonds. The existence of a pyramidality effect in d7-d7 bonds is supported by qual. extended-HMO calcns. and exptl. data for binuclear rhodium compds. The results for several families of binuclear complexes of CoII, RuI, OsI, and PtIII show that the metal-metal distance decreases with increasing pyramidality and with increasing torsion angles. The importance of the central metal atom and of the presence of axial ligands is also discussed.

Keywords

pyramidality effect metal metal single bond
transition metal complex metal bond
rhodium complex metal bond
cobalt complex metal bond
ruthenium complex metal bond
osmium complex metal bond
platinum complex metal bond

Index Entries

Bond
metal-metal; pyramidality effect on metal-metal single bonds
Molecular structure
Transition metal complexes
pyramidality effect on metal-metal single bonds
7440-04-2, complexes
7440-06-4, complexes
7440-16-6, complexes

7440-18-8, complexes
7440-48-4, complexes
pyramidality effect on metal-metal single bonds

126:322364
The pH-dependent permselectivity of the fibrinogen-modified carbon paste electrode.
El Rhazi, Mama; Randriamahazaka, Hyacinthe N. (Faculte Sciences Techniques, Mohammedia, Morocco). Electroanalysis, 9(5), 403-406 (English) 1997 VCH CODEN: ELANEU. ISSN: 1040-0397.
DOCUMENT TYPE: Journal CA Section: 72 (Electrochemistry)
The modification of C paste matrixes with fibrinogen is reported. The effect of the pH of the soln. on the cyclic voltammetry peak currents of pos. or neg. charged redox analytes was examd. at the fibrinogen-modified C paste electrode. In the presence of the coating, pH-dependent selectivity in electrochem. detection of charged species was demonstrated depending on the sign of the supported charge. Above the isoelec. pH attributed to the immobilized protein (5.5), the current response of anionic redox probes [Fe(CN)63-/Fe(CN)64-] was impeded, while the response was almost totally restored below this pH. Opposite trends were obsd. with the Ru(NH3)63+/Ru(NH3)62+ cationic redox analytes.

Keywords

permselectivity fibrinogen modified carbon paste electrode
redox reaction electrode response pH fibrinogen

Index Entries

Fibrinogens
bovine; pH-dependent permselectivity of fibrinogen-modified carbon paste electrodes
Proteins (specific proteins and subclasses)
immobilized; pH-dependent permselectivity of fibrinogen-modified carbon paste electrodes
Electrochemical redox reaction
pH-dependent current response of metal complex redox pairs at fibrinogen-modified carbon paste electrodes
Carbon paste electrodes
pH-dependent permselectivity of fibrinogen-modified
Chemically modified electrodes
Permselectivity
pH-dependent permselectivity of fibrinogen-modified carbon paste electrodes
13408-62-3
13408-63-4
pH-dependent current response of the Fe(CN)63-/Fe(CN)64- redox pair at fibrinogen-modified carbon paste electrodes
18943-33-4
19052-44-9
pH-dependent current response of the Ru(NH3)63+/Ru(NH3)62+ redox pair at fibrinogen-modified carbon paste electrodes
12408-02-5, properties
pH-dependent permselectivity of fibrinogen-modified carbon paste electrodes

126:257976
Metal supported macrocycles: synthesis and characterization of some new 1,3-bis(benzimidazol-1-yl-methylene)benzene and 1,4-bis(benzimidazol-1-yl-methylene)benzene-bridged metal(II)

cation complexes.
Chawla, Sukhvinder K.; Gill, Beerpal K. (Dep. Chem., Guru Nanak Dev Univ., Amritsar, India). Polyhedron, 16(8), 1315-1322 (English) 1997 Elsevier CODEN: PLYHDE. ISSN: 0277-5387. DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions)
Two new nonchelating bidentate ligands 1,3-bis(benzimidazol-1-yl-methylene)benzene, hereafter 1,3-BIX, and 1,4-bis[benzimidazol-1-yl-methylene]benzene, hereafter 1,4-BIX, were synthesized and their complexes with MII salts (M = Co, Ni, Cu, Zn, Pd and Pt) were prepd. and characterized using elemental anal., magnetic moment measurement, IR, UV-visible and 13C NMR and FAB-MS (in some cases) studies. CuII, PdII and PtII metal ions yield dinuclear square-planar complexes viz. [enM(BIX)]2X4 (en = 1,2 diaminoethane; M = Pb or Pt, X = NO3; M = Cu, X = ClO4, BIX = 1,3- or 1,4-BIX). CoII chloride forms dimeric tetrahedral [Co(BIX)Cl2]2, whereas NiII and ZnII chlorides yield polymeric [M(BIX)Cl2]n complexes.

Keywords

transition metal bisbenzimidazolylmethylenebenzene complex prepn
benzimidazolylmethylenebenzene transition metal complex prepn

Index Entries

Transition metal complexes
bis(benzimidazol-1-yl-methylene)benzene
51-17-2
for prepn. of 1,3- and 1,4-bis(benzimidazol-1-yl-methylene)benzenes and their transition metal complexes
626-15-3
for prepn. of 1,3-bis(benzimidazol-1-yl-methylene)benzenes and its transition metal complexes
623-24-5
for prepn. of 1,4-bis(benzimidazol-1-yl-methylene)benzenes and its transition metal complexes
188600-74-0
188600-76-2
188600-82-0
188600-84-2
polymeric
39677-05-9
188600-95-5
prepn. and complexation with transition metals
188600-68-2
prepn. and mass spectrum of
188600-66-0
188600-70-6
188600-72-8
188600-78-4
188600-80-8
188600-93-3
prepn. of
188600-87-5
prepn., IR and mass spectra of
188600-90-0
prepn. and IR spectrum of

126:157847
Organosilicon polymers-synthesis, architecture, reactivity and applications.
Richter, Robin; Roewer, Gerhard; Boehme, Uwe; Busch, Kathleen; Babonneau, Florence; Martin, Hans Peter; Mueller, Eberhard

(Department of Inorganic Chemistry, Freiberg University of Mining and Technology, Freiberg D-09596, Germany). Appl. Organomet. Chem., 11(2), 71-106 (English) 1997 Wiley CODEN: AOCHEX. ISSN: 0268-2605. DOCUMENT TYPE: Journal; General Review CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 40, 57

Recent polysilane and related copolymer synthesis reactions were reviewed with 140 refs.. The Wurtz-type polymn. of dichloro-, trichloro- or tetrachloro-silanes, so far the most extensively studied, enables access to a large variety of architectures ranging from one- to three-dimensional (3D) topologies, and based on secondary > SiR2, tertiary RSi(Si)3 or quaternary Si(Si)4 silicon units in the polymer backbone. These polysilanes usually present an intrinsic low reactivity, detrimental for fiber processing. Examples are given to illustrate how this reactivity can be increased by secondary substitution reactions, which create reactive entities that can favor further crosslinking reactions. Secondly a novel route involving heterogeneously catalyzed disproportionation of chloromethyldisilanes, developed in our lab., is reviewed which offers a direct access to polysilyne-type 3D architecture constituted by arrangements of fused rings. The Lewis-base catalyzed disproportionation mechanism is discussed and seems to involve donor stabilized silylenes as key intermediates in the polymer formation process. The exptl. results are supported by ab-initio quantum chem. calcns. Silylenes attack the Si sites of higher functionality causing a high regioselectivity for the exclusive formation of branched oligosilanes. The oligomers undergo thermally induced branching and crosslinking reactions leading to poly(chloromethylsilanes). Obviously, there are analogies to the oligomer and polymer formation of the transition-metal complex catalyzed dehydropolymn. of methyldisilanes.
Poly(chloromethylsilanes) exhibit a high reactivity due to the presence of Si-Cl bonds. Disproportionation of chloromethyldisilanes in presence of olefins such as styrene provides promising polymer precursors for SiC fibers. Their rheol. properties have been investigated for various styrene contents. The polymer fibers spun from melt are cured under ammonia, and then pyrolyzed to silicon carbide fibers, showing temp. resistance up to 1500 °C.

Keywords

review organosilicon polymer architecture reactivity application
polysilane architecture reactivity application review
silicon carbide fiber polysilane precursor review

Index Entries

Polysilanes
fiber; precursors for silicon carbide fiber
Silicon carbide fibers
polysilanes precursors for
Synthetic polymeric fibers, preparation
polysilanes; precursors for silicon carbide fiber
Polysilanes
prepn. and architecture and reactivity and applications of organosilicon polymers
409-21-2, preparation
fiber; polysilanes precursors for

126:149091
Quantum chemical study of stereochemistry of rhodium catalysts for hydroformylation.
Liao, Daiwei; Lin, Yinzhong; Huang, Zunnan; Peng, Yiru (Dep. Chem., Xiamen Univ., Xiamen 361005, Peop. Rep. China). Xiamen Daxue

Xuebao, Ziran Kexueban, 35(3), 445-447 (Chinese) 1996 Xiamen Daxue CODEN: HMHHAF. ISSN: 0438-0479. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 22, 29, 65, 78
The stereochem. models of the rhodium coordination complex, Rh(CO)(PH3)3R (R = H, C3H6) as a main part of both homogeneous transition metal complex catalysts and heterogeneous supported tertiary phosphine carbonyl rhodium complex catalysts, were studied with quantum chem. calcn. It was in favor of total energy that (1) the central metal atom, Rh, intended to move from the plane of the three phosphine atoms to carbonyl or carbon monoxide (about 0.0232 nm) and (2) the olefin intended to attack and coordinate to central metal atom from opposite of carbonyl or carbon monoxide.

Keywords

hydroformylation rhodium catalyst quantum chem calcn
carbonyl phosphine rhodium stereochem hydroformylation catalyst

Index Entries

Hydroformylation catalysts
Quantum chemistry
Stereochemistry
Alkenes, reactions
quantum chem. study of stereochem. of rhodium catalysts for hydroformylation
185954-32-9
186639-02-1
quantum chem. study of stereochem. of rhodium catalysts for hydroformylation

126:71670
Binding Mode of [Ruthenium(II) (1,10-Phenanthroline)2L]2+ with Poly(dT*dA-dT) Triplex. Ligand Size Effect on Third-Strand Stabilization.
Choi, Sang-Doh; Kim, Myoung-Sun; Kim, Seog K.; Lincoln, Per; Tuite, Eimer; Norden, Bengt (College of Sciences, Yeungnam University, Kyoungsan 712-749, S. Korea). Biochemistry, 36(1), 214-223 (English) 1997 American Chemical Society CODEN: BICHAW. ISSN: 0006-2960. DOCUMENT TYPE: Journal CA Section: 6 (General Biochemistry)
The binding of homochiral Ru(II)[(1,10-phenanthroline)2L]2+ complexes {where L = 1,10-phenanthroline (phen), dipyrido[3,2-a:2',3'-c]phenazine (DPPZ) or benzodipyrido[3,2-a:2',3'-c]phenazine (BDPPZ)} to poly(dT*dA-dT) triplex has been investigated by linear and CD and thermal denaturation. Anal. of the linear dichroism spectra indicates that the extended DPPZ and BDPPZ ligands lie approx. parallel to the base-pair and base-triplet planes consistent with intercalation which is also supported by strong hypochromism in the interligand absorption bands with either duplex or triplex. The spectral properties of any of the metal complex enantiomers were similar for binding to either duplex or triplex DNA, indicating that the third strand, which occupies the major groove of the template duplex, has little effect on the binding geometries and hence supports the hypothesis that the metal complexes all bind from the minor groove with the DPPZ and BDPPZ ligands intercalated but without intercalation in the case of [Ru(phen)3]2+. Third-strand stabilization depended on the nature of the third substituted phenanthroline chelate ligand but was not directly related to its size, with stabilizing power increasing in the order phen < BDPPZ < DPPZ. This observation further supports intercalation of the extended ligands from the minor groove of the triplex since the extended BDPPZ ligand that would protrude into the major groove of

the template would have greater steric interference than DPPZ with the third DNA strand.

Keywords

Ruthenium phenanthroline complex DNA triplex binding

Index Entries

Conformation
Molecular association
Triplex (DNA structure)
DNA
binding mode of [ruthenium(II) (1,10-phenanthroline)2L]2+ with poly(dT*dA-dT) triplex, how ligand size effect on third-strand stabilization
24939-09-1
30177-40-3
19368-51-5
24162-09-2
148409-03-4
148409-04-5
185323-11-9
185323-12-0
binding mode of [ruthenium(II) (1,10-phenanthroline)2L]2+ with poly(dT*dA-dT) triplex, how ligand size effect on third-strand stabilization

128:284164
Gas adsorbent for adsorption of carbon monoxide and others.
Ichikawa, Masaru; Tachibana, Junichi (Mitsubishi Chemical Industries Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10085594 A2 7 Apr 1998 Heisei, 4 pp. (Japanese). (Japan). CODEN: JKXXAF. CLASS: ICM: B01J020-22. ICS: B01D053-02; C07D487-22; C09K003-00. APPLICATION: JP 96-267933 18 Sep 1996. DOCUMENT TYPE: Patent CA Section: 48 (Unit Operations and Processes)
The gas adsorbent is characterized by having a metal complex of porphyrin compd. supported on a porous material. The porous material is a zeolite, and has fine pores of i.d. 1-100 nm. The porous material is a honeycomb-structured layered silica porous material formed from cryst. layered silicate having plural laminated plate-shaped sheet layers and siloxane bonds bonded between adjacent layers, the content of alkali metal ions in the cryst. layered silicate is 0.2 wt.%, and it has a sp. surface area ³ 1000 m2/g. The metal complex of porphyrin compd. is Hb. The gas adsorbent is used for adsorption of CO.

Keywords

gas adsorbent zeolite porphyrin compd complex
Hb zeolite gas adsorbent
carbon monoxide adsorbent zeolite Hb

Index Entries

Gases
adsorbent; gas adsorbent contg. porphyrin compd. complex supported on zeolite for adsorption of carbon monoxide and others
Adsorbents
gas; gas adsorbent contg. porphyrin compd. complex supported on zeolite for adsorption of carbon monoxide and others
Zeolites (synthetic), properties

porphyrin metal complex-supported; gas adsorbent contg.
porphyrin compd. complex supported on zeolite for
adsorption of carbon monoxide and others
Hemoglobins
supported on zeolites; gas adsorbent contg. porphyrin compd.
complex supported on zeolite for adsorption of carbon
monoxide and others
630-08-0, processes
adsorption of; gas adsorbent contg. porphyrin compd. complex
supported on zeolite for adsorption of carbon monoxide
and others
101-60-0, compd., metal complex
gas adsorbent contg. porphyrin compd. complex supported on
zeolite for adsorption of carbon monoxide and others
917-23-7, complex with Mo(IV)
supported on zeolites; gas adsorbent contg. porphyrin compd.
complex supported on zeolite for adsorption of carbon
monoxide and others

128:115372
Process for preparing supported metallocene catalysts.
Bidell, Wolfgang; Langhauser, Franz; Moll, Ulrich; McKenzie, Ian David;
Fischer, David; Hingmann, Roland; Schweier, Gunther (BASF A.-G.;
Bidell, Wolfgang; Langhauser, Franz; Moll, Ulrich; McKenzie, Ian
David; Fischer, David; Hingmann, Roland; Schweier, Gunther,
Germany). PCT Int. Appl. WO 9801481 A1 15 Jan 1998, 45 pp.
DESIGNATED STATES: W: AU, CN, JP, KR, US; RW: AT, BE, CH,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German).
(World Intellectual Property Organization). CODEN: PIXXD2. CLASS:
ICM: C08F004-602. ICS: C08F010-00. APPLICATION: WO
97-EP3132 17 Jun 1997. PRIORITY: DE 96-19626834 4 Jul 1996; DE
97-19720979 20 May 1997. DOCUMENT TYPE: Patent CA Section:
35 (Chemistry of Synthetic High Polymers) Section cross-reference(s):
37, 40, 67
The invention concerns a process for prepg. a supported transition
metal catalyst which contains a particulate org. or inorg. carrier
material, a transition metal complex and a metallocenium-ion-forming
compd., characterized in that the process comprises the following
steps: (a) bringing a soln. of a metallocenium-ion-forming compd. such
as aluminoxanes into contact with a second solvent in which this
compd. is only slightly sol., in the presence of the support; (b) removing
at least some of the solvent from the carrier material; and (c) bringing a
soln. of a mixt. of a metallocenium-ion-forming compd. and a transition
metal complex into contact with a second solvent in which this mixt. is
only slightly sol., in the presence of the support obtained according to
(a) and (b). The catalysts from this process exhibit high reactivity in the
presence of a small amt. of H and are useful in the manuf. of polyolefins
for films, fibers, and moldings. A typical catalyst was manufd. by
adding 160 mL 1.53 M Me aluminoxane (I) in PhMe in 4 h to a
suspension of 20 g silica gel in 170 mL pentane, aging 12 h, decanting,
washing the ppt. with PhMe and pentane, suspending the washed ppt.
in 150 mL pentane, adding 115 mg
rac-bis[3,3'-(2-methylbenz[e]indenyl)]dimethylsilanediylzirconium
dichloride in 30.6 g 1.53 M I soln., aging 1 h, filtering, and washing with
PhMe and pentane.

Keywords

metallocene polymn catalyst supported manuf
fiber polyolefin manuf metallocene catalyst
molding polyolefin manuf metallocene catalyst
film polyolefin manuf metallocene catalyst
silanediylzirconocene supported polymn catalyst

methylbenzindenyl zirconium supported polymn catalyst
aluminoxane supported zirconocene polymn catalyst
silica gel supported zirconocene polymn catalyst

Index Entries

Silica gel, uses
SG 332, support; metallocene catalysts supported on compds. treated with metallocenium ion-forming compds. for polymn. of olefins
Plastic films
Molded plastics, processes
Polyolefin fibers
in claims; metallocene catalysts supported on compds. treated with metallocenium ion-forming compds. for polymn. of olefins
Polymerization catalysts
Metallocenes
Polyolefins
metallocene catalysts supported on compds. treated with metallocenium ion-forming compds. for polymn. of olefins
Methyl aluminoxanes
metallocenium ion-forming compds.; metallocene catalysts supported on compds. treated with metallocenium ion-forming compds. for polymn. of olefins
100-99-2, uses
cocatalyst; metallocene catalysts supported on compds. treated with metallocenium ion-forming compds. for polymn. of olefins
150995-51-0
9003-07-0
metallocene catalysts supported on compds. treated with metallocenium ion-forming compds. for polymn. of olefins
1344-28-1, uses
support; metallocene catalysts supported on compds. treated with metallocenium ion-forming compds. for polymn. of olefins

128:102427
Metal complex bicenter catalysts for olefin and diene polymerization.
Mushina, E.; Gavrilenko, I.; Antipov, E.; Podolsky, Yu.; Frolov, V.; Tinyakova, E.; Krentsel, B.; Gabutdinov, M.; Solodjankin, S.; Vakhbreit, A.; Medvedeva, C.; Cherevin, V. (A. V. Topchiev Inst. Petrochemical Synthesis, Russian Acad. Scis., Moscow 117912, Russia). Appl. Catal., A, 166(1), 153-161 (English) 1998 Elsevier Science B.V.
CODEN: ACAGE4. ISSN: 0926-860X. DOCUMENT TYPE: Journal
CA Section: 35 (Chemistry of Synthetic High Polymers)
New bicenter metal-complex catalysts supported on dehydrated microspheric silica gel were synthesized and tested in the polymn. of ethene and butadiene. The catalysts contain two components, a titanium-magnesium- or chromium-contg. compd. and an oligodienyl metal-aluminum complexes with a bridge structure (metal- Zr or Ni). Linear medium-d. polyethylene was prepd. via gas-phase polymn. of ethene in the absence of comonomers. The catalysts also display high efficiency in the polymn. of butadiene, the products obtained being the mixts. of cis- and trans-polymers. Titanium-magnesium catalysts modified by zirconium-organoaluminum compds. are most active in both ethene and butadiene polymn. processes.

Keywords

metal complex bicenter catalyst olefin polymn
diene polymn metal complex bicenter catalyst

Index Entries

Polymerization catalysts
metal complex bicenter catalysts for olefin and diene polymn.
9002-88-4
linear, medium-d.; metal complex bicenter catalysts for olefin and diene polymn.
1586-92-1
1624-02-8
7440-02-0, complexes with oligodienyl
7440-67-7, complexes with oligodienyl
7550-45-0, uses
7786-30-3, uses
100-99-2, reactions
693-04-9
9003-17-2
metal complex bicenter catalysts for olefin and diene polymn.
7631-86-9, uses
support; metal complex bicenter catalysts for olefin and diene polymn.

129:109217
Novel supported catalysts.
Tanielyan, Setrak K.; Augustine, Robert L. (Seton Hall University, USA).
PCT Int. Appl. WO 9828074 A1 2 Jul 1998, 66 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: B01J023-00. ICS: B01J023-58; B01J023-02; C07C005-02; C07C005-05; C07C045-00; C07C027-20; C07C027-26.
APPLICATION: WO 97-US23540 19 Dec 1997. PRIORITY: US 96-34338 23 Dec 1996. DOCUMENT TYPE: Patent CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 67
A supported catalyst comprising a support, an anchoring agent such as a heteropoly acid or anion, and a metal complex which is useful in a wide variety of org. reactions, esp. the hydrogenation of substituted a,b-unsatd. acids and esters, is provided. Various methods of prepg. the supported catalyst of the present invention are also disclosed.

Keywords

catalyst supported prepn
rhodium phosphine complex catalyst hydrogenation hydroformylation

Index Entries

Catalyst supports
Catalysts
Hydroformylation catalysts
Hydrogen transfer catalysts
Hydrogenation catalysts
prepn. of supported catalysts contg. an heteropoly acid as anchoring agent and a rhodium complex
628-08-0
18424-76-5
61979-92-8
82545-71-9

99922-88-0
prepn. of supported allylation catalysts
115826-95-4
210057-23-1
prepn. of supported catalysts contg. an heteropoly acid as anchoring agent and a metal complex
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1318-93-0, reactions
1343-93-7
1344-28-1, reactions
7440-44-0, reactions
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35466-83-2
300-57-2
prepn. of supported phenylation catalysts
1604-11-1
3618-96-0
3619-02-1
prepn. of supported stereoselective hydrogenation catalysts

128:196928
Dynamic phenomena at the oxide/water interface: the interplay of surface charge formation, metal complex adsorption, and dissolution/re-precipitation.
Lambert, J-F.; Che, M. (Laboratoire de Reactivite de Surface, Universite' Pierre et Marie Curie, PARIS 75252, Fr.). Stud. Surf. Sci. Catal., 109(Dynamics of Surfaces and Reaction Kinetics in Heterogeneous Catalysis), 91-110 (English) 1997 Elsevier Science B.V. CODEN: SSCTDM. ISSN: 0167-2991. DOCUMENT TYPE: Journal; General Review CA Section: 66 (Surface Chemistry and Colloids) Section cross-reference(s): 67
A review with 59 refs. concerning phenomena occurring during the earliest stages of the prepn. of supported transition metal catalysts, i.e., at the interface between aq. solns. and solid oxides, is given. Topics discussed include: catalyst supports and their surfaces: structural problems; surface charge formation (origin, structuring effect on the soln., metal complex adsorption mechanisms: successive degrees of intimacy in the metal/surface interaction [electrostatic

adsorption: the double layer, H bonding and outer sphere complexes, inner sphere complexes]); dissoln./re-pptn. (weathering: lessons of geochem., proton- and ligand-promoted dissoln., pptn. and co-pptn.).

Keywords

review dynamic phenomena oxide water interface
transition metal catalyst interface phenomena review
aq soln metal catalyst interface review

Index Entries

Interfacial structure
Surface electric charge
Transition metal oxides
interplay of surface charge formation, metal complex adsorption, and dissoln./repptn. phenomena at supported transition metal catalyst/water interface
Catalysts
supported transition metal; interplay of surface charge formation, metal complex adsorption, and dissoln./repptn. phenomena at supported transition metal catalyst/water interface
7732-18-5, miscellaneous
interplay of surface charge formation, metal complex adsorption, and dissoln./repptn. phenomena at supported transition metal catalyst/water interface

129:250745
Polymer supported metal complex catalysts with memory.
Efendiev, A. A.; Shakhtakhtinsky, T. N. (Azerbaijan Academy of Sciences Institute of Polymer Materials, Sumgait 373204, Azerbaijan).
Stud. Surf. Sci. Catal., 118(Preparation of Catalysts VII), 533-540 (English) 1998 Elsevier Science B.V. CODEN: SSCTDM. ISSN: 0167-2991. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 38
A review with 11 refs. The use of polymer complexons as solid supports opens up new possibilities to vary ligand surrounding and to control catalytic properties of complexes. This is due to macromol. nature of the polymer complexons, i.e., the flexibility of macromols., their ability of acquiring different conformations and possibilities of varying locations of functional complexing groups both in macromol. chains and in a three-dimensional polymeric matrix. This paper summarizes our results on synthesis, investigation and use of polymer supported metal complex catalysts with memory to the catalyzed substrate.

Keywords

polymer supported metal complex catalyst review
memory polymer supported metal catalyst review

Index Entries

Catalysts
Coordination compounds
Polymers, uses
polymer supported metal complex catalysts with memory

129:336255

Synthesis, characterization and catalytic behavior of polymer supported Ru(III) complex.
Dalal, M. K.; Patel, D. R.; Ram, R. N. (Department of Chemistry, Faculty of Science, M.S. University of Baroda, Baroda 390 002, India). Catal., [Pap. Natl. Symp.], 12th, Meeting Date 1994, 503-506. Edited by: Gupta, N. M.; Chakrabarty, Dipak K. Narosa: New Delhi, India. (English) 1996. CODEN: 66ZZAC. DOCUMENT TYPE: Conference
CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 36
The polymer supported Ru(III) complex was synthesized using styrene-divinyl benzene copolymer (XAD-2) as a support (crosslinking 2%) by chloromethylation and sequential attachment of ethylenediamine and salicylaldehyde followed by treatment with RuCl3.3H2O using ethanol as a swelling agent. Physico-chem. properties such as surface area, moisture-content, bulk d. and swelling of this supported metal complex catalyst have been studied. Catalyst is characterized by IR, reflectance UV-Vis spectroscopy and TGA. The catalytic activity of the above catalyst was investigated for hydrogenation of n-hexene by varying parameters such as substrate concn., amt. of the catalyst and temp. of the system. The kinetic parameters have been calcd. on the basis of the above data.

Keywords

polymer supported ruthenium complex synthesis characterization
catalyst polymer supported ruthenium complex
hexene hydrogenation polymer supported ruthenium complex
chloromethylated divinylbenzene styrene copolymer ruthenium catalyst

Index Entries

Hydrogenation catalysts
Hydrogenation kinetics
for n-hexene; synthesis, characterization and catalytic behavior of polymer supported Ru(III) complex
Density
Surface area
Swelling (mechanical)
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592-41-6, reactions
hydrogenation of; synthesis, characterization and catalytic behavior of polymer supported Ru(III) complex
90-02-8, reaction products with chloromethylated divinylbenzene-styrene copolymer and ethylenediamine and ruthenium chloride
107-15-3, reaction products with chloromethylated divinylbenzene-styrene copolymer and salicylaldehyde and ruthenium chloride
9003-70-7, chloromethylated, reaction products with ethylenediamine and salicylaldehyde and ruthenium chloride
10049-08-8, reaction products with chloromethylated divinylbenzene-styrene copolymer and ethylenediamine and salicylaldehyde
synthesis, characterization and catalytic behavior of polymer supported Ru(III) complex

128:89235
Supported transition metal catalyst systems and their use in gas-phase polymerization of olefins.
Vaughan, George Alan; Canich, Jo Ann Marie; Matsunaga, Phillip T.; Gindelberger, David Edward; Squire, Kevin Richard (Exxon Chemical Patents Inc., USA). PCT Int. Appl. WO 9748736 A1 24 Dec 1997, 30

pp. DESIGNATED STATES: W: AU, CA, CN, HU, JP, KR; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-80. ICS: B01J031-28; C08F004-02; C08F010-00. APPLICATION: WO 97-US10418 17 Jun 1997. PRIORITY: US 96-20095 17 Jun 1996. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers)

A Group 9, 10, or 11 metal complex stabilized by a bidentate ligand structure is immobilized on a solid support, particularly one comprising silica, such that the catalyst loading is <100 mmol transition metal compd. per g of support. A gas-phase polymn. process for olefinic monomers comprises contacting ³1 such monomer(s) with the catalyst system under gas-phase polymn. conditions. Specifically, the monomers include C2-20 (cyclo)olefins, C4-20 nonconjugated diolefins, C8-20 aryl-substituted olefins, C4-20 gem-disubstituted olefins, and/or C20-1000 macromers with olefin terminal groups. Thus, 30.0 g SiO2 (pore vol. 1.6 cm3/g) was added to a soln. of 1.200 g [1,2-bis(2,6-diisopropylphenylimino)acenaphthene]dibromonickel and 38.1 g Me aluminoxane in 38.9 g toluene, stirred, and the solvent was evapd. at ambient temp. in vacuo overnight to give a supported catalyst. Polymn. of ethylene in a fluidized bed of the catalyst at 39.2° and total pressure 2170 kPa for a time equiv. to 2.7 bed turnovers gave 228 g/(g catalyst) of polyethylene with d. 0.9107, m.p. 117.2°, wt.-av. mol. wt. 564 ´ 103, mol.-wt. distribution 2.77, and branching 18.4 Me groups/1000 C atoms.

Keywords

olefin polymn supported catalyst
transition metal complex polymn catalyst
nickel complex supported polymn catalyst
fluidized bed polymn ethylene

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Coordination polymerization catalysts
Fluidized beds
Methyl aluminoxanes
supported transition metal catalyst systems for gas-phase polymn. of olefins
97-93-8, uses
cocatalyst; supported transition metal catalyst systems for gas-phase polymn. of olefins
7631-86-9, uses
support; supported transition metal catalyst systems for gas-phase polymn. of olefins
75170-97-7
75180-85-7
163893-70-7
200879-37-4
9002-88-4
25213-02-9
supported transition metal catalyst systems for gas-phase polymn. of olefins

128:23277
Supported cationic transition metal catalyst complex for the polymerization of olefins.
Van Tol, Maurits Frederik Hendrik; Van Beek, Johannes Antonius Maria (DSM N.V.; Van Tol, Maurits Frederik Hendrik; Van Beek, Johannes Antonius Maria, Neth.). PCT Int. Appl. WO 9742228 A1 13 Nov 1997, 58 pp. DESIGNATED STATES: W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT,

LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-64. ICS: C08F010-02. APPLICATION: WO 97-NL238 1 May 1997. PRIORITY: EP 96-201119 3 May 1996. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67

The title catalyst system comprises a carrier material, ³1 transition metal complex, and optionally ³1 co-catalyst. The transition metal complex consists of a reduced Group 4-6 transition metal (e.g. Ti), with a multidentate monoanionic ligand and with 2 monoanionic ligands. Thus, ethylene and octene were polymd. at 120° in the presence of Me aluminoxane and SiO2-supported (dimethylaminoethyl)tetramethylcyclopentadienyl titanium (III) dichloride to give a unimodal copolymer having polydispersity 7.3.

Keywords

metallocene cationic catalyst complex polymn olefin
titanium complex catalyst polymn olefin
cyclopentadienyl complex transition metal catalyst polymn
supported titanium complex catalyst polymn

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Methyl aluminoxanes
cocatalyst; supported cationic transition metal catalyst complex for polymn. of olefins
Cationic polymerization catalysts
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7631-86-9, uses
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178762-91-9
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198770-52-4
199165-05-4
9002-88-4
25068-12-6
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32572-54-6
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7705-07-9, reactions
13294-71-8
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123091-15-6
198714-33-9

198714-65-7
supported cationic transition metal catalyst complex for polymn. of olefins

129:54452
Preparation of 1,3-diphosphinopropane ligands, their arsino analogs, and their transition metal complexes as catalysts.
Bianchini, Claudio; Meli, Andrea; Vizza, Francesco (Consiglio Nazionale Delle Ricerche; Bianchini, Claudio; Meli, Andrea; Vizza, Francesco, Italy). PCT Int. Appl. WO 9822482 A1 28 May 1998, 15 pp.
DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C07F009-50. ICS: C07F015-00; B01J031-24. APPLICATION: WO 97-EP6493 20 Nov 1997.
PRIORITY: IT 96-FI272 21 Nov 1996. DOCUMENT TYPE: Patent CA Section: 29 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 21, 35, 67
In this patent are described the prepn. of ligands X1X2C[CH2Y(R1)(R2)]2 (R1, R2 = identical or different hydrocarbyl groups; X1 = H, hydrocarbyl, or polar group; X2 = polar group, Y = As, P; where the hydrocarbyl groups are linear, branched, or cyclic alkyl contg. 1-6 C's or an aryl group possibly alkyl-substituted and the polar group is aryl- or alkylsulfonic acid or -sulfonate (SO3H or SO3- M+ where M = Li, Na, K), OH, or quaternary ammonium salt) and their transition metal catalysts, where the metal is chosen from Pd, Rh, Ir, Ru, Pt, Ni, Co, for chem. reactions in H2O or in aq. media. Thus, (PhCH2)2C(CO2Et)2 (I) was prepd. by benzylation of PhCH2CH(CO2Et)2 with PhCH2Br. I was then reduced with LiAlH4 to form (PhCH2)2C(CH2OH)2 which was chlorinated with SOCl2 to give (PhCH2)2C(CH2Cl)2 (II). II was then sulfonated with 96% H2SO4 to give [p-NaO3SC6H4CH2]2C(CH2Cl)2 (III) after addn. of a cold aq. 20% soln. of NaOH. III was then reacted with KPPh2 to yield [p-NaO3SC6H4CH2]2C(CH2PPh2)2. The ligands described above were employed for the prepn. of transition metal complexes either in situ or isolated. These complexes were employed directly or after anchoring on appropriate inorg. or org. supports as catalysts in various known reactions (i.e. polymn., hydroformylation, redn. of ketones to alcs., and redn. of alkenes) in aq. media, in liq.-diphase systems (in which one phase is H2O), or in heterogeneous system (liq.-solid) for which some examples are given.

Keywords

diphosphinopropane ligand transition metal complex prepn
diarsinopropane ligand transition metal complex prepn
transition metal diphosphinopropane complex catalyst prepn
polymn catalyst diphosphinopropane transition metal complex
hydroformylation catalyst diphosphinopropane transition metal complex
redn catalyst diphosphinopropane transition metal complex

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Group VIII element complexes
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Polymerization catalysts

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42196-31-6
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prepn. of diphosphinopropane ligands, their arsino analogs, and
their transition metal complexes as catalysts for redn. of
7631-86-9, uses
support; prepn. of diphosphinopropane ligands, their arsino
analogs, and their transition metal complexes as catalysts

128:252029
Acid-Base Hydrolytic Chemistry Route to Thin Films Containing
Terminal Donor Ligands and Organometallic Complexes for
Heterogenization of Metal Complex Catalysis.
Petrucci, Maria G. L.; Kakkar, Ashok K. (Department of Chemistry,
McGill University, Montreal, PQ H3A 2K6, Can.). Organometallics,
17(9), 1798-1811 (English) 1998 American Chemical Society.
CODEN: ORGND7. ISSN: 0276-7333. DOCUMENT TYPE: Journal
CA Section: 78 (Inorganic Chemicals and Reactions) Section
cross-reference(s): 29, 67
A general synthetic approach based on the hydrolysis of aminosilanes
R'3Si-NR2 with org. compds. contg. acidic protons, to construct thin
films of donor ligands on inorg. oxide surfaces that are subsequently
used to support a variety of organometallic complexes, is reported.
The reaction of surface hydroxyl groups on SiO2, glass, quartz, and
single-crystal Si with SiCl4, followed by NEt2H, affords
surface-anchored Si-NEt2 moieties which, upon simple acid-base
hydrolysis with HO(CH2)nXR2 (n = 3, X = N, R = Et; n = 3, X = P, R = Ph;
n = 4, X = P, R = Et), n-HOC6H4XR2 (X = P, R = Ph, n = 2; X = N, R =

Et, n = 3), and HOCHMe(CH2)3NEt2 at ambient temp., yield thin films contg. terminal phosphine and amine donor ligands. These ligands are then used to covalently anchor organometallic complexes of Ni(0), Rh(I), Ru(II), and Pd(0) via bridge-splitting or ligand-displacement reactions. The synthesis of soln. models to the surface-bound species and the characterization of the latter using numerous surface anal. techniques proved useful in detg. the conditions for the deposition process and in the evaluation of the structure of the supported metal complexes. A thin film of [Si]-O-(CH2)3PPh2Ni(CO)2PPh3 on glass catalyzes the oligomerization of phenylacetylene resulting in a product distribution different from that of a similar reaction in soln. The enhanced activity and selectivity of the organometallic Ni(0) thin films suggests that a pos. role is played by the orientation of the surface-bound organometallic species in catalysis.

Keywords

catalyst oligomerization phenylacetylene nickel complex film
cyclotrimerization phenylacetylene nickel complex film catalyst
aminosilane surface anchored alcoholysis functionalized alc
thin film metal complex hydrolytic prepn
silica supported metal complex thin film

Index Entries

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Alcoholysis
Ultrathin films
Amino silanes
Surface hydroxyl group
prepn. of thin film silica-bound transition metal siloxyalkylamine or -phosphine complexes via alcoholysis of anchored aminosilane with amino- or phosphino-functionalized alcs.
Transition metal phosphine complexes
prepn. of thin film silica-bound transition metal siloxyalkylphosphine complexes via alcoholysis of anchored aminosilane with phosphino-functionalized alcs.
91-68-9, silica-bound
622-93-5, silica-bound
2360-09-0, silica-bound
5412-69-1, silica-bound
55759-76-7, silica-bound
60254-10-6, silica-bound
204978-36-9, silica-bound
204978-37-0, silica-bound
204978-38-1, silica-bound
204978-39-2, silica-bound
204978-40-5, silica-bound
204978-41-6, silica-bound
204978-42-7, silica-bound
204978-43-8, silica-bound
204978-44-9, silica-bound
204978-45-0, silica-bound
204978-46-1, silica-bound
204978-47-2, silica-bound

alcoholysis of aminosilanes anchored on glass, silica, quartz, or
single-crystal silicon and subsequent functionalization with
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13938-94-8
14221-01-3
14523-22-9
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14694-95-2
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and phosphino-functionalized alcs.
536-74-3
612-71-5
1165-53-3
78486-45-0
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siloxyalkylphosphine nickel complex or thin film silica-bound
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38033-47-5
38073-65-3
105272-29-5
170646-77-2
204978-22-3
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prepn. as homogeneous catalyst for oligomerization of
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81323-70-8
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204978-29-0
204978-30-3
204978-31-4
204978-32-5
204978-33-6
204978-34-7
prepn. of

129:96017
Syntheses of polystyrene supported chelating resin containing the
Schiff base derived from salicylaldehyde and triethylene tetramine
and its copper (II), nickel (II), cobalt (II), iron (III), zinc (II), cadmium
(II), molybdenum (VI), zirconium (IV) & uranium (VI) complexes.
Syamal, A.; Singh, M. M. (Department of Chemistry, Regional

Engineering College, Kurukshetra 136 119, India). Indian J. Chem., Sect. A: Inorg., Bio-inorg., Phys., Theor. Anal. Chem., 37A(4), 350-354 (English) 1998 National Institute of Science Communication, CSIR.
CODEN: ICACEC. ISSN: 0376-4710. DOCUMENT TYPE: Journal
CA Section: 37 (Plastics Manufacture and Processing) Section cross-reference(s): 78

A polymer-anchored chelating ligand was synthesized by the reaction of chloromethylated polystyrene (contg. 0.94 mmol of Cl per g of resin and 1% cross-linked with divinylbenzene) and the Schiff base derived from salicylaldehyde and triethylenetetramine. A series of polystyrene supported Cu(II), Ni(II), Co(II), Fe(III), Zn(II), Cd(II), Zr(IV), dioxomolybdenum (VI) and dioxouranium (VI) complexes, PS-LCu, PS-LNi, PS-LCo, PS-LFeCl.DMF, PS-LZn, PS-LCd, PS-LZr(OH)2.DMF, PS-LMoO2, and PS-LUO2 (where PS-LH2 = polymer-anchored Schiff base and DMF = dimethylformamide) were synthesized and characterized by elemental anal., IR, electronic spectra and magnetic susceptibility measurements. The complexes PS-LCu, PS-LNi and PS-LCo have square planar structure, PS-LFeCl.DMF, PS-LMoO2 and PS-LUO2 have octahedral structure, PS-LZn and PS-LCd are tetrahedral and PS- LZr(OH)2.DMF is pentagonal bipyramidal. The polymer-anchored Cu(II), Co(II) and Fe(III) complexes are paramagnetic while Ni(II), Zn(II), Cd(II), Zr(IV), dioxomolybdenum(VI) and dioxouranium(VI) complexes are diamagnetic. The neg. shift of the n (C =N) (azomethine) and the pos. shift of n (C-O) (phenolic) are indicative of ONNO donor behavior of the polymer-anchored Schiff base.

Keywords

chloromethylated polystyrene metal chelating resin prepn
structure magnetic susceptibility metal chelating resin

Index Entries

Schiff bases
polystyrene-anchored, metal complexes; prepn. and structure and magnetic susceptibility of polystyrene-Schiff base metal complex chelating resins
Chelating agents
Coordination (structure)
Coordination number
Diamagnetic susceptibility
Electron donors
Molecular structure
Paramagnetic susceptibility
Polymer-supported reagents
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7439-89-6, complexes with Schiff base-chloromethylated polystyrene
7439-98-7, complexes with Schiff base-chloromethylated polystyrene
7440-02-0, complexes with Schiff base-chloromethylated polystyrene
7440-43-9, complexes with Schiff base-chloromethylated polystyrene
7440-48-4, complexes with Schiff base-chloromethylated polystyrene
7440-50-8, complexes with Schiff base-chloromethylated polystyrene
7440-61-1, complexes with Schiff base-chloromethylated polystyrene
7440-66-6, complexes with Schiff base-chloromethylated polystyrene
7440-67-7, complexes with Schiff base-chloromethylated polystyrene
9003-70-7, chloromethylated, reaction products with Schiff base, metal complexes
prepn. and structure and magnetic susceptibility of polystyrene-Schiff base metal complex chelating resins

128:308352
Polymer-supported transition metal complex alkene epoxidation catalysts.
Sherrington, D. C. (Department of Pure and Applied Chemistry, University of Strathclyde, Glasgow G1 1XL, UK). Spec. Publ. - R. Soc. Chem., 216(Supported Reagents and Catalysts in Chemistry), 220-228 (English) 1998 Royal Society of Chemistry. CODEN: SROCDO. ISSN: 0260-6291. DOCUMENT TYPE: Journal; General Review CA Section: 27 (Heterocyclic Compounds (One Hetero Atom))
Review with 20 refs.

Keywords

epoxidn catalyst polymer supported review
transition metal polymer supported catalyst review

Index Entries

Epoxidation catalysts
Polymer-supported reagents
Transition metal complexes
Alkenes, reactions
polymer-supported transition metal complex alkene epoxidn. catalysts

128:274107
Dispersion properties of metal oxide nanoparticles supported in mesoporous activated carbons.
Yoshizawa, Noriko; Yamada, Yoshio; Shiraishi, Minoru; Kojima, Shigeyuki; Tamai, Hisashi; Yasuda, Hajime (National Institute for Resources and Environment, Tsukuba 305, Japan). Tanso, 181, 8-13 (Japanese) 1998 Tanso Zairyo Gakkai. CODEN: TASOA3. ISSN: 0371-5345. DOCUMENT TYPE: Journal CA Section: 57 (Ceramics)
Mesoporous carbons were prepd. by steam activation of a mixt. of a brown coal (Morwell) and metal (Fe, Ni or Co) acetylacetonate complexes (metal, 2.5 wt.% of coal). According to the anal. with the N2 adsorption isotherms measured at 77 K, enhancement of mesoporosity in the activated carbons clearly depends upon the type of metals, i.e., Fe > Co > Ni. X-ray diffraction patterns showed the presence of metal oxide with less-cryst. carbon. Observation with transmission electron microscope (TEM) clearly illustrated wide dispersion of nano-scale (5-10 nmF) particles of the metal oxide and mesoporous pits as mesopores in the disordered carbon microtexture. Such characteristic mesopores were not found in the samples prepd. only from the coal, and therefore can be recognized as characteristic mesopores induced by metal complex. The properties in size distribution and dispersion mode for metal oxide particles were investigated with TEM photographs, and found to be characteristic for each type of metals. These properties were also discussed in connection with the morphol. feature of mesoporous texture. The results can be used to control not only the amt. of mesopore but also the morphol. of the mesoporous texture.

Keywords

activated carbon dispersion metal oxide nanoparticle
dispersion metal oxide nanoparticle mesoporous carbon

Index Entries

Dispersion (of materials)
Nanoparticles

Pore structure
Porosity
dispersion properties of metal oxide nanoparticles supported in mesoporous activated carbons
Oxides (inorganic), processes
nanoparticles; dispersion properties of metal oxide nanoparticles supported in mesoporous activated carbons
Brown coal
precursor; dispersion properties of metal oxide nanoparticles supported in mesoporous activated carbons
1313-99-1, processes
1332-37-2, processes
11104-61-3
dispersion; dispersion properties of metal oxide nanoparticles supported in mesoporous activated carbons
7440-44-0, processes
mesoporous activated; dispersion properties of metal oxide nanoparticles supported in mesoporous activated carbons
3264-82-2
14024-17-0
14024-48-7
precursor; dispersion properties of metal oxide nanoparticles supported in mesoporous activated carbons

129:262014
Manufacture of carbonyl compounds from alcohols, ethers or olefins.
Yoneda, Noriyuki; Minami, Takeshi; Oota, Ikuo; Sugiyama, Hideki (Chiyoda Chemical Engineering Construction Co., Japan). Jpn. Kokai Tokkyo Koho JP 10245361 A2 14 Sep 1998 Heisei, 12 pp. (Japanese). (Japan). CODEN: JKXXAF. CLASS: ICM: C07C053-08. ICS: B01J031-22; C07C045-50; C07C047-02; C07C053-12; C07B061-00. APPLICATION: JP 97-67344 5 Mar 1997. DOCUMENT TYPE: Patent CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 23
In manuf. of carbonyl compds. by carbonylation of alcs., ethers or olefins by CO using noble metal complex catalysts supported on pyridine ring-contg. porous crosslinked resins, the concns. of pyridine compds. leaching into the reaction solns. are controlled in 0.5-200 ppm (as N) to suppress the loss of active catalysts via the decompn. of pyridine compds. of resins. Thus, 4-vinylpyridine-divinylbenzene copolymer was treated with RhCl3 in MeI-MeOH-AcOH mixt. and heated under CO to give [RhCO2I2]--contg. catalyst, which was used in manuf. of AcOH by carbonylation of MeOH by CO.

Keywords

carbonyl compd manuf alc carbonylation catalyst
alc carbonylation rhodium catalyst polymer support
ether carbonylation rhodium catalyst pyridine polymer
olefin carbonylation catalyst rhodium polymer support
acetic acid manuf methanol carbonylation catalyst
vinylpyridine copolymer rhodium catalyst support

Index Entries

Noble metals
complexes; prepn. of carbonyl compds. by carbonylation of alcs., ethers or olefins using Rh catalysts supported on pyridine-contg. polymers
Carbonylation catalysts
Carbonyl compounds (organic), preparation
Alcohols, reactions

Alkenes, reactions
Ethers, reactions
prepn. of carbonyl compds. by carbonylation of alcs., ethers or olefins using Rh catalysts supported on pyridine-contg. polymers
74-88-4, uses
10049-07-7
64-19-7, preparation
67-56-1, reactions
630-08-0, reactions
prepn. of carbonyl compds. by carbonylation of alcs., ethers or olefins using Rh catalysts supported on pyridine-contg. polymers
9017-40-7
support; prepn. of carbonyl compds. by carbonylation of alcs., ethers or olefins using Rh catalysts supported on pyridine-contg. polymers

128:23700
Catalase-like activity of triethylene glycol dimethacrylate-crosslinked polyacrylamide supported metal complexes.
Jose, Lissy; Pillai, V. N. Rajasekharan (School of Chemical Sciences, Mahatma Gandhi University, Kottayam 686 560, India). Polymer, Volume Date 1998, 39(1), 229-233 (English) 1997 Elsevier Science Ltd. CODEN: POLMAG. ISSN: 0032-3861. DOCUMENT TYPE: Journal CA Section: 38 (Plastics Fabrication and Uses) Section cross-reference(s): 67
The catalase-like activity of complexes resulting from the interaction between triethylene glycol dimethacrylate-crosslinked polyacrylamide amine and metal ions such as Cu(II), Cr(III), Fe(III), Mn(II) and Pb(II) was investigated. The decompn. of H2O2 was chosen as a model reaction. The percentage conversion of H2O2 was found to be in the order Mn(II) > Cu(II) > Fe(III) > Cr(III) > Pb(II) complexes. The catalytic activity was found to depend upon the initial concn. of H2O2, amt. of the complex, temp. and pH of the soln. The activation energy of H2O2 decompn. was calcd. to be 10.26 kJ mol-1. The polymeric metal complex catalysts could be reused four times without any redn. in activity.

Keywords

catalase activity polyacrylamide deriv metal complex
hydrogen peroxide decompn catalyst polyacrylamide deriv
triethylene glycol dimethacrylate crosslinked polyacrylamide deriv
copper catalyst hydrogen peroxide decompn
chromium catalyst hydrogen peroxide decompn
iron catalyst hydrogen peroxide decompn
manganese catalyst hydrogen peroxide decompn
lead catalyst hydrogen peroxide decompn
kinetics decompn hydrogen peroxide metal complex

Index Entries

Decomposition catalysts
Decomposition kinetics
catalytic activity of triethylene glycol dimethacrylate-crosslinked polyacrylamide deriv-metal complexes for decompn of hydrogen peroxide
107-15-3, reaction products with crosslinked polyacrylamide, metal complexes
7439-89-6, complexes with crosslinked polyacrylamide deriv.
7439-92-1, complexes with crosslinked polyacrylamide deriv.
7439-96-5, complexes with crosslinked polyacrylamide deriv.
7440-47-3, complexes with crosslinked polyacrylamide deriv.

7440-50-8, complexes with crosslinked polyacrylamide deriv.
151733-11-8, reaction products with ethylenediamine, metal complexes
catalysts; catalytic activity for decompn. of hydrogen peroxide
7722-84-1, reactions
catalytic activity of triethylene glycol dimethacrylate-crosslinked polyacrylamide deriv-metal complexes for decompn of hydrogen peroxide
151733-11-8
prepn. and characterization of

128:7631
The uses of polynuclear metal complexes to develop designed dispersions of supported metal oxides: Part I. Synthesis and characterization.
Van Der Voort, Pascal; Mitchell, Mark B.; Vansant, Etienne F.; White, Mark G. (Laboratory of Inorganic Chemistry, University of Antwerp (U.I.A.), Wilrijk B-2610, Belg.). Interface Sci., 5(2/3), 169-197 (English) 1997 Kluwer. CODEN: INSCE9. ISSN: 0927-7056. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 78
A review with 81 refs.; the way to design a catalyst begins with a consideration of the reaction mechanism to the desired product so that only the chem. required of that mechanism will be present on the surface. The reaction mechanism will suggest the structure(s) to be developed on the surface which should be stabilized against changes during operation. We believe that this ideal may be approached by decorating surfaces or porous powders with a monolayer of metal complexes having the desired structures. These complexes may be partially decompd. to develop a high dispersion of the supported metal oxide.

Keywords

polynuclear metal complex synthesis catalyst review
supported metal oxide catalyst synthesis review

Index Entries

Coordination compounds
polynuclear; uses of polynuclear metal complexes to develop designed dispersions of supported metal oxides and synthesis and characterization
Catalysts
Oxides (inorganic), uses
Cluster compounds
uses of polynuclear metal complexes to develop designed dispersions of supported metal oxides and synthesis and characterization

128:88393
Catalytic behaviors of zeolite-supported poly(vinyl alcohol)-amino acid-metal complexes in hydrogenation.
Xia, Ding; Liu, Li; Huang, Mei-Yu; Jiang, Ying-Yan (Academia Sinica, Institute of Chemistry, Beijing 100080, Peop. Rep. China). Polym. Adv. Technol., 8(11), 641-643 (English) 1997 John Wiley & Sons Ltd. CODEN: PADTE5. ISSN: 1042-7147. DOCUMENT TYPE: Journal
CA Section: 21 (General Organic Chemistry) Section cross-reference(s): 34, 78
Two kinds of zeolite-supported polyvinyl alc.-amino acid-metal

complexes, zeolite-polyvinyl alc.-L-proline-palladium complex and zeolite-polyvinyl alc.-L-alanine-platinum complex have been prepd. by a very simple method. The Pd complex can catalyze the hydrogenation of styrene, vinyl acetate, cyclohexene and cyclohexanone, and the Pt complex can catalyze the hydrogenation of o-cresol, m-cresol and a-phenylethanol to obtain corresponding products under 1 atm H2 and 20°C. All the yields amounted to 100%. These catalysts are very stable and can be reused.

Keywords

zeolite polyvinyl alc complex hydrogenation catalyst
amino acid metal complex hydrogenation catalyst
styrene hydrogenation palladium proline zeolite catalyst

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Amino acids, uses
Coordination compounds
Polymers, uses
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147-85-3, uses
7647-10-1
9002-89-5
26023-84-7
56-41-7, compd. with zeolite and polyvinyl alc.
7440-05-3, complex with zeolite-polyvinyl alc.-L-proline
7440-06-4, complex with zeolite-polyvinyl alc.-L-alanine
9002-89-5, compd. with zeolite and L-proline
95-48-7, reactions
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100-42-5, reactions
108-05-4, reactions
108-38-3, reactions
108-39-4, reactions
108-95-2, reactions
109-06-8
110-83-8, reactions
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96-47-9
100-41-4, preparation
108-93-0, preparation
109-05-7
110-82-7, preparation
141-78-6, preparation
583-59-5
591-21-9
591-23-1
1193-81-3
5343-92-0
catalytic behaviors of zeolite-supported poly(vinyl alc.)-amino acid-metal complexes in hydrogenation

128:61184
Catalytic Hydrogenolysis and Isomerization of Light Alkanes over the Silica-Supported Titanium Hydride Complex (YSiO)3TiH.
Rosier, Cecile; Niccolai, Gerald P.; Basset, Jean-Marie (Laboratory of

Surface Organometallic Chemistry, CNRS-CPE Lyon, Villeurbanne F-69616, Fr.). J. Am. Chem. Soc., 119(50), 12408-12409 (English) 1997 American Chemical Society. CODEN: JACSAT. ISSN: 0002-7863. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
The hydrogenolysis of light alkanes under mild conditions of temp. and pressure catalyzed by (YSiO)3ZrH and (YSiO)3HfH has recently been reported. The same expts. performed with (YSiO)3TiH as the catalyst has given unexpected results. The complex (YSiO)3TiH (2) is synthesized in two steps from TiNp4 and silica. In a first step, Ti(neopentyl)4 is reacted with a silica surface dehydroxylated at 500°. One equivalent of neopentane is liberated by Ti grafted. IR and NMR spectroscopies, elemental anal. and several chem. tests are consistent with a surface species in which a trisneopentyl metal complex is linked to the surface with one siloxy bridge, YSiOTi(neopentyl)3 (1). When 1 is heated at 150° under hydrogen, the formation of titanium and silicium hydrides are evidenced by IR spectroscopy and by exchange with D2. Chem. anal. are consistent with the formulation 2. Methane and ethane are produced in a 1/1 ratio together with the hydride species, which indicates that 2 catalyzes the hydrogenolysis of neopentane. The ratio 1/1 was surprising as it was strictly 3/1 in the case of Zr and Hf. In the latter case, a mechanism in which neopentane was converted by stepwise loss of C1 by b-Me elimination to three equiv. of methane and one equiv. of methane was proposed. The ratio 1/1 in the case of Ti can be explained by a skeletal rearrangement of the alkyl ligand during the hydrogenolysis reaction. This has been studied by following the evolution of products in the reaction of neopentane, isobutane and n-butane with hydrogen over the catalyst 2 at various temp. and conversion. In each case, the primary products obsd. - notably n-butane in the case of neopentane and isobutane - indicate clearly that a skeletal rearrangement occurs. Moreover, in the case of neopentane, the formation of ethane and propane in a ratio 1/1 is consistent with the isomerization of surface neopentyl fragment to isopentyl fragment prior to product formation. In the case of the reaction catalyzed by 2, the surface alkyl fragment obtained by C-H bond activation undergoes b-Me elimination. The intermediate metal-alkyl-olefin complex persists long enough (relative to olefin rotation) to undergo reinsertion of the rotated olefin into the metal-carbon bond.

Keywords

titanium hydride silica catalyst alkane reaction
neopentane hydrogenolysis isomerization catalyst mechanism

Index Entries

Hydrogenolysis
Hydrogenolysis catalysts
Isomerization
Isomerization catalysts
catalytic hydrogenolysis and isomerization of light alkanes over the silica-supported titanium hydride complex
36945-13-8, silica bound
36945-13-8
catalyst precursor; catalytic hydrogenolysis and isomerization of light alkanes over the silica-supported titanium hydride complex
7631-86-9, reactions
7704-98-5, silica bound
75-28-5
106-97-8, reactions
463-82-1
74-82-8, preparation
74-84-0, preparation

74-98-6, preparation
catalytic hydrogenolysis and isomerization of light alkanes over the silica-supported titanium hydride complex

129:281646
Molecular dispersion of metal complexes within zeolitic solids: an alternative way to prepare supported MOx catalysts.
Van Der Voort, P.; Mathieu, M.; Vansant, E. F.; Rao, S. N. R.; White, M. G. (Laboratory of Inorganic Chemistry, Department of Chemistry, University of Antwerpen, Wilrijk 2610, Belg.). J. Porous Mater., 5(3/4), 305-316 (English) 1998 Kluwer Academic Publishers. CODEN: JPMAFX. ISSN: 1380-2224. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
A review with 42 refs.; mol. Designed Dispersion (MDD) of metal complexes on a highly porous support is a novel synthesis method to prep. high quality heterogeneous catalysts. The process basically consists of two steps: (1) the anchoring of the complex onto the support in a controlled way and (2) the mild oxidn. of the grafted complex towards catalytically active metal-oxide surface structures. This article presents two typical case studies: (1) the incorporation of cationic Cu-complexes in a H-ZSM-5 zeolite from the liq. phase and (2) the gas phase modification of pure silica MCM-48, using the VO(acac)2 complex. In both cases, superior catalysts are obtained. Detailed chem., phys. and catalytical analyses of these catalysts are discussed in the text. Comparison is made with analogous catalysts, prepd. by conventional methods.

Keywords

dispersion metal complex zeolite catalyst review
copper dispersion HZSM5 zeolite catalyst review
vanadium dispersion MCM48 zeolite catalyst review

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MCM zeolites
MCM-48; mol. dispersion of metal complexes within zeolitic solids as alternative way to prep. supported MOx catalysts
Catalysts
Coordination compounds
Zeolite HZSM-5
Zeolites (synthetic), uses
Oxides (inorganic), uses
mol. dispersion of metal complexes within zeolitic solids as alternative way to prep. supported MOx catalysts

129:245667
Optically active phosphine derivative having at least two vinyl groups, polymer produced using the same as monomer and transition metal complexes of these.
Tamao, Kyoko; Itoi, Yohei (Takasago International Corp., Japan). Eur. Pat. Appl. EP 864577 A2 16 Sep 1998, 26 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). (European Patent Organization). CODEN: EPXXDW. CLASS: ICM: C07F009-6574. ICS: C07F015-00; C08F030-02; C08F030-04; C07C045-50; C07B053-00. ICI: C07M007-00. APPLICATION: EP 98-301763 10 Mar 1998. PRIORITY: JP 97-72817 11 Mar 1997. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Specified

2'-diarylphosphino-1,1'-biphenylen-2-yloxy(6,6'-divinyl-1,1'-binaphthalen
e -2,2'-diyloxy)phosphine derivs. are useful in polymers and transition
metal complexes. Also disclosed are a polymer having structural units
derived from the phosphine deriv. and a transition metal complex
obtained by causing a transition metal compd. to act on the phosphine
deriv. or the polymer. A novel polymer-supported ligand is provided
which, when used as a catalyst for asym. syntheses, gives satisfactory
results concerning catalytic activity, enantiomer excess, etc.

Keywords

optically active phosphine deriv polymer
transition metal complex phosphine polymer

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Hydroformylation catalysts
optically active phosphine deriv. having at least two vinyl groups,
polymer produced using the same as monomer and
transition metal complexes of these
100-42-5, hydroformylated
14874-82-9, complexes with
2'-diarylphosphino-1,1'-biphenylen-2-yloxy(6,6'-divinyl-1,1'-binaphthalen
e -2,2'-diyloxy)phosphine polymers
213188-62-6
213188-64-8
80655-81-8
126613-06-7
132532-04-8
132548-91-5
149917-88-4
187742-81-0
205238-73-9
205238-75-1
213314-12-6
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213314-15-9
213314-16-0
213314-17-1
213314-18-2
68-12-2, reactions
358-23-6
6737-42-4
7726-95-6, reactions
18531-94-7
18531-99-2
69739-34-0
optically active phosphine deriv. having at least two vinyl groups,
polymer produced using the same as monomer and
transition metal complexes of these

128:115388
Preparation of oligomeric and polymeric liquid crystalline materials and
intermediates containing coordinated transition metal in the
mesogenic side chain.
Styring, Peter; Saez, Isabel; Gough, Neil; Sinn, Ekkehark; Goodby,
John William (Secretary of State for Defence; Styring, Peter; Saez,
Isabel; Gough, Neil; Sinn, Ekkehark; Goodby, John William, UK).
PCT Int. Appl. WO 9749671 A1 31 Dec 1997, 61 pp. DESIGNATED
STATES: W: GB, JP, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB,
GR, IE, IT, LU, MC, NL, PT, SE. (English). (World Intellectual Property
Organization). CODEN: PIXXD2. CLASS: ICM: C07C251-24. ICS:

C09K019-40; C07F007-08; C07F007-21; C08F030-04; C08G077-04.
APPLICATION: WO 97-GB1584 12 Jun 1997. PRIORITY: GB 96-13068 21 Jun 1996. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 75

A group of liq. cryst. compds. (I) and (II) [R1 = CkH2k+1, CkF2k+1, polyether residue, a chiral functionality; k undefined; R2 = H, F, Me; R3 = alk(en)yl, alkynyl, OH, oxiranyl, etc.; X, Y = O2C, CO2, CO, O, S, etc.; Z = (chiral) alkyl, alkyl, etc.; m = 0, 1; n = 0-2; M = transition metal] including polymers, monomers, oligomers and intermediates are prepd. and claimed. Also included are sym. and non-sym. poly(dimethylsiloxy) compds. having end groups derived from I and II. I and II are useful in display technol., thin-film magnetic materials, e.g., for data storage, in lubricants, and anisotropically supported catalysts. For example, a title polymer was prepd. by heating the methacrylate ester of a Ni-complex III (multistep prepn. given) for 48 h at 70° with AIBN in THF under N.

Keywords

metal complex liq cryst polymer prepn
liq cryst polymer side chain metal
nickel complex mesogenic side chain polymethacrylate
methacrylate polymn metal side chain complex
polymethacrylate prepn metal side chain complex

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Liquid crystalline polymers
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prepn. of oligomeric and polymeric liq. cryst. materials and intermediates contg. coordinated transition metal in the mesogenic side chain
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27774-13-6
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201673-23-6
201673-25-8
condensation with ethanediamine; prepn. of oligomeric and polymeric liq. cryst. materials and intermediates contg. coordinated transition metal in the mesogenic side chain
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920-46-7
esterification with OH-terminated Ni complex; prepn. of oligomeric and polymeric liq. cryst. materials and intermediates contg.

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201686-04-6
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prepn. and condensation with ethanediamine and phenylmalonaldehyde; prepn. of oligomeric and polymeric liq. cryst. materials and intermediates contg. coordinated

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prepn. and hydrolysis; prepn. of oligomeric and polymeric liq. cryst.
materials and intermediates contg. coordinated transition
metal in the mesogenic side chain
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prepn. and polymn.; prepn. of oligomeric and polymeric liq. cryst.
materials and intermediates contg. coordinated transition
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201686-02-4
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9016-00-6, vinyl-functional metal complex-terminated
31900-57-9, hydrosilylation reaction products with vinyl-functional metal
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reaction with bromoundecanol; prepn. of oligomeric and polymeric
liq. cryst. materials and intermediates contg. coordinated
transition metal in the mesogenic side chain
1611-56-9

reaction with dihydropyran; prepn. of oligomeric and polymeric liq. cryst. materials and intermediates contg. coordinated transition metal in the mesogenic side chain

128:129402
Solid solutions for cleaning up chemical processes using hydrogen peroxide.
Wilson, Sharon L.; Jones, Craig W. (Solvay Interox RandD Widnes Laboratory, Cheshire WA8 0FE, UK). Stud. Surf. Sci. Catal., 110(3rd World Congress on Oxidation Catalysis, 1997), 603-613 (English) 1997 Elsevier Science B.V. CODEN: SSCTDM. ISSN: 0167-2991. DOCUMENT TYPE: Journal; General Review CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 63, 67
A review, with ~26 refs., on development of supported metal complexes as O transfer heterogeneous catalysts for activation of H2O2 to effect selective oxidn. of org. compds. in prodn. of fine chems. and pharmaceutical intermediates. Prepn. of metal (IV) phosphates, chromium silicalite and catalytic oxidn. of org. compds. [e.g., penicillin-G, alkenes, epoxidn. of alkenes, ketones, styrene] are discussed.

Keywords

review supported metal complex oxidn catalyst
hydrogen peroxide catalytic oxidn review

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Silicalites (zeolites)
chromium; heterogeneous catalysts for activation of hydrogen peroxide in selective oxidn. of org. compds. for fine chems. manuf.
Epoxidation catalysts
Oxidation catalysts
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Transition metal complexes
Alkenes, reactions
Ketones, reactions
heterogeneous catalysts for activation of hydrogen peroxide in selective oxidn. of org. compds. for fine chems. manuf.
61-33-6, reactions
100-42-5, reactions
7722-84-1, reactions
heterogeneous catalysts for activation of hydrogen peroxide in selective oxidn. of org. compds. for fine chems. manuf.

129:339054
Novel Pentacyano Complexes of Tri- and Tetravalent Platinum.
Maliarik, Mikhail; Glaser, Julius; Toth, Imre (Kurnakov Institute of General and Inorganic Chemistry, Russian Academy of Sciences, Moscow 117907, Russia). Inorg. Chem., 37(21), 5452-5459 (English) 1998 American Chemical Society. CODEN: INOCAJ. ISSN: 0020-1669. DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions)
New pentacyano complexes of tri- and tetravalent Pt were obtained in aq. soln. and characterized by multinuclear NMR (195Pt, 13C) supported by Raman spectroscopy. The complexes form as products of redox decompn. of metal-metal bonded Pt-Tl compds. The trimetallic [(NC)5Pt-Tl-Pt(CN)5]3- yields a new dimeric compd. of Pt(III), [(NC)5Pt-Pt(CN)5]4-. The latter is a rare representative of unbridged

dimeric complexes of trivalent Pt and was obtained through an oxidn. of monomeric square-planar Pt(II) species by a metal complex. From the bimetallic compds. [(NC)5Pt-Tl(CN)n]n- (n = 0-2) tetravalent Pt complexes are formed. Depending on the Pt-Tl species, electron transfer is initiated either by heat or by exposition to light and results in [Pt(CN)6]2- or in [Pt(CN)5(OH)]2- and [Pt(CN)5(H2O)]-, with the 195Pt NMR chem. shift values 1638.7 (±0.6) and 1766.7 (±0.6), resp. Proton dissocn. const. of [Pt(CN)5(H2O)]- was detd., pKa = 2.51 (±0.01). In both PtIII and PtIV pentacyano complexes Pt is hexacoordinated forming a pseudo-octahedron with four equiv. equatorial cyanides and one apical. Related Pt(IV) species, [Pt(CN)5X]2- (X = Cl, Br, I), also were studied. In all the pentacyano complexes a pronounced trans influence is reflected in a substantial difference between the 195Pt-13C spin-spin coupling const. for the apical (trans) and the equatorial (cis) C sites. In this respect, the studied X ligands can be ordered in decreasing 195Pt-13Ctrans coupling const.: H2O > Cl- > Br- > I- > OH- > CN-.

Keywords

platinum trivalent tetravalent pentacyano prepn NMR
Raman platinum trivalent tetravalent pentacyano
trans influence platinum trivalent tetravalent pentacyano
proton dissocn const platinum tetravalent pentacyano

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NMR (nuclear magnetic resonance)
Raman spectra
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Dissociation constant
proton; of tetravalent platinum pentacyano aqua complex
Stereoelectronic effect
trans; of tri- and tetravalent platinum pentacyano complexes
14191-88-9, properties
NMR of tri- and/or tetravalent platinum pentacyano complexes
562-76-5
15321-27-4
for prepn. of tri- and/or tetravalent platinum pentacyano complexes
207611-26-5
207723-32-8
intermediate; for prepn. of tri- and/or tetravalent platinum pentacyano complexes
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67572-96-7
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215121-22-5
215121-23-6
215121-24-7
prepn. and multinuclear NMR and Raman spectra

129:262013
Manufacture of carbonyl compounds from alcohols, ethers or olefins.
Yoneda, Noriyuki; Minami, Takeshi; Nakagawa, Yoshihiro; Sugiyama, Hideki (Chiyoda Chemical Engineering Construction Co., Japan). Jpn. Kokai Tokkyo Koho JP 10245360 A2 14 Sep 1998 Heisei, 12 pp. (Japanese). (Japan). CODEN: JKXXAF. CLASS: ICM: C07C051-12.
ICS: B01J031-18; C07C053-08; C07C061-00; C07B061-00.
APPLICATION: JP 97-67343 5 Mar 1997. DOCUMENT TYPE: Patent
CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 23
In manuf. of carbonyl compds. by carbonylation of alcs., ethers or olefins by CO using noble metal complex catalysts supported on

pyridine ring-contg. porous crosslinked resins, the reaction products are depressurized and drawn into a sepn. tower via a line, while CO-contg. gases are supplied to the line or the bottom of the tower. The catalysts contained in the products are recycled without crystn. Flow sheets for the manuf. of AcOH from MeOH or Me2O using Rh complex are illustrated.

Keywords

carbonyl compd manuf alc carbonylation
carbonylation catalyst carbonyl compd manuf
rhodium complex catalyst carbonylation alc
acetic acid manuf methanol carbonylation

Index Entries

Noble metals
complexes; manuf. of carbonyl compds. from alcs., ethers or olefins
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Alkyl iodides
Carbonyl compounds (organic), preparation
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7440-16-6, complexes
64-19-7, preparation
67-56-1, reactions
115-10-6
630-08-0, reactions
manuf. of carbonyl compds. from alcs., ethers or olefins

129:90010
Role of bio-metal Fe(III) in anticancer effect of dacarbazine.
Shukla, Jyotsna; Pitre, K. S. (Electrochemical Laboratory, Department of Chemistry, Dr. Harisingh Gour University, Sagar 470 003, India).
Indian J. Physiol. Pharmacol., 42(2), 223-230 (English) 1998
Association of Physiologists and Pharmacologists of India. CODEN: IJPPAZ. ISSN: 0019-5499. DOCUMENT TYPE: Journal CA Section: 1 (Pharmacology)
Physicochem., microbial and pharmacol. studies on Fe(III)-Dacarbazine complex have been done in solid and aq. phase. On the basis of elemental anal., polarog. studies, amperometric titrns. and IR spectral studies the probable formula for the complex has been worked out to be 1:1, Fe(III)-Dacarbazine. The metal ligand interaction has been studied using polarog. method at 25±1°C and at ionic strength of m=1.0 (KCl). Microbial studies on the complex was done against various pathogenic bacteria viz. Pseudomonas mangiferac, Staphylococus aureus, Salmonella typhi and Vibreo colarae and fungi i.e. Trichothesium and Chrysosporium sp. using Raper's method. Mouse sarcoma cell line 180 and Balb/C mice were used for the anticancer screening of solid complex in vitro and in vivo resp. The obsd. polarog. data, on lingane treatment revealed the formation of single (1:1) (M:L) complex with Fe(III) and dacarbazine ligands. The results of amperometric titrns. of Fe(III) with dacarbazine in 1M KCl supporting electrolyte pH 7.0±0.1 supported the above findings the IR data speaks of the complex formation between the metal and the decarbazine ligand through the two nitrogen one each of primary amide and trizo groups. The results of microbial and pharmacol. studies with the M:Drug complex revealed that the anticancer activity of the drug metal complex is nearly doubled as compared to the pure drug. As such Fe(III) dacarbazine complex may be recommended to the

therapeutic experts for its possible use as more potent anticancer drug.

Keywords

dacarbazine iron complex antitumor
antibacterial antifungal dacarbazine iron complex

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Fungicides
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4342-03-4, complex with iron
role of biometal Fe(III) in anticancer effect of dacarbazine

129:55696
Studies on intercalated transition metal complex as catalyst.
Kotkar, Dilip; Thakkar, N. V. (Inorganic Chemistry Division, The Institute of Science, Mumbai 400 032, India). Stud. Surf. Sci. Catal., 113(Recent Advances in Basic and Applied Aspects of Industrial Catalysis), 767-772 (English) 1998 Elsevier Science B.V. CODEN: SSCTDM. ISSN: 0167-2991. DOCUMENT TYPE: Journal CA
Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 24, 67
Hydrogenation of cycloalkenes using Rh-supported montmorillonite as catalyst was studied. The catalyst was prepd. by oxidative degrdn. of intercalated tris-(phenanthroline)-Rh(III) followed by redn. under hydrogen atm. The most notable difference in the hydrogenation behavior was seen in case of cyclopentene/cyclooctene; both olefins could be efficiently hydrogenated when pure, but there was no conversion of cyclooctene in presence of cyclopentene.

Keywords

cycloalkene hydrogenation rhodium complex montmorillonite catalyst

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1318-93-0, uses
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110-82-7, preparation
287-92-3
292-64-8
110-83-8, reactions
142-29-0
930-68-7
931-88-4
rhodium-intercalated montmorillonite catalyst in hydrogenation of cycloalkenes

128:236499
Resonance Raman Spectroscopic Study of Phenoxyl Radical Complexes.

Schnepf, Robert; Sokolowski, Achim; Mueller, Jochen; Bachler, Vinzenz; Wieghardt, Karl; Hildebrandt, Peter (Max-Planck-Institut fuer Strahlenchemie, Muelheim D-45470, Germany). J. Am. Chem. Soc., 120(10), 2352-2364 (English) 1998 American Chemical Society. CODEN: JACSAT. ISSN: 0002-7863. DOCUMENT TYPE: Journal
CA Section: 73 (Optical, Electron, and Mass Spectroscopy and Other Related Properties) Section cross-reference(s): 72

Resonance Raman (RR) spectroscopy was employed to study coordinated phenoxyl radicals (M = Ga, Sc, Fe) which were electrochem. generated in soln. by using 1,4,7-triazacyclononane-based ligands contg. 1,, 2, or 3 p-MeO or p-CMe3 N-substituted phenolates, i.e., 1,4,7-tris(3,5-di-tert-butyl-2-hydroxybenzyl)-1,4,7-triazacyclononane (3Lbut), 1,4,7-tris(3-tert-butyl-5-methoxy-2-hydroxybenzyl)-1,4,7-triazacyclononane (3Lmet), 1,4-bis(3-tert-butyl-5-methoxy-2-hydroxybenzyl)-7-ethyl-1,4,7-triazacyclononane (2Lmet), and 1-(3-tert-butyl-5-methoxy-2-hydroxybenzyl)-4,7-dimethyl-1,4,7-triazacyclononane (1Lmet). A selective enhancement of the vibrational modes of the phenoxyl chromophores is achieved upon excitation in resonance with the p ® p* transition at ~410 nm. The interpretation of the spectra was supported by quantum chem. (d. functional theory) calcns. which facilitate the vibrational assignment for the coordinated phenoxyl radicals and provide the framework for correlations between the RR spectra and the structural and electronic properties of the radicals. For the uncoordinated phenoxyl radicals the geometry optimization yields a semiquinone character which increases from the unsubstituted to the p-Me- and the p-methoxy-substituted radical. This tendency is indicated by a steady upshift of the n8a mode which predominantly contains the Cortho-Cmeta stretching coordinate, thereby reflecting strengthening of this bond. The calcd. normal-mode frequencies for these radicals are in a good agreement with the exptl. data constituting a sound foundation for extending the vibrational anal. to the 2,6-di-tert-butyl-4-methoxyphenoxyl which is the building block of the macrocyclic ligands 3Lmet, 2Lmet, and 1Lmet. The metal-coordinated radical complexes reveal a similar band pattern as the free radicals with the modes n8a and n7a (C:O stretching) dominating the RR spectra. These 2 modes are sensitive spectral indicators for the structural and electronic properties of the coordinated phenoxyl radicals. A systematic study of complexes contg. different ligands and metal ions reveals that 2 parameters control the semiquinone character of the phenoxyls: (i) an electron-donating substituent in the para position which can accept spin d. from the ring and (ii) an electron-accepting metal ion capable of withdrawing excess electron d., introduced by addnl. electron-donating substituents in ortho positions. It appears that both effects, which are reflected in (i) the frequency of the mode n8a and (ii) the frequency difference of the modes n8a and n7a, balance an optimum electron d. distribution in the phenoxyl radical. Along similar lines, it was possible to interpret the RR spectral changes between the Fe monoradical, [Fe(3Lmet)]+·, and diradical, [Fe(3Lmet)]2+··, complexes. Both the parent as well as the radical complexes of Fe exhibit a phenolate-to-Fe charge transfer band >500 nm. Excitation in resonance with this transition yields a selective enhancement of the vibrational modes of the coordinated phenolates which reveal a significantly more complex band pattern than the coordinated phenoxyls. For a large no. of phenolate modes, distinct differences in frequencies and relative intensities were found between the parent and the monoradical Fe complexes implying that oxidn. of 1 phenolate affects the structures and electron d. distributions in the ground and excited states of the remaining phenolates. These results are discussed in relation to the structure of the Cu-coordinated tyrosyl radical in the active site of galactose oxidase.

Keywords

resonance Raman phenoxyl radical metal complex

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Electrochemical redox reaction
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Quantum chemistry
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of phenoxyl radicals and related metal complexes
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resonance; of phenoxyl radicals and related metal complexes
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188731-00-2
188731-05-7
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204400-46-4
204400-47-5
204400-48-6
204400-53-3
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resonance Raman spectra of
188731-06-8
204400-49-7
204400-50-0
204400-51-1
204400-52-2
visible spectra of

128:141181
Combinatorial synthesis and analysis of organometallic compounds and olefin polymerization catalysts.
Weinberg, W. Henry; McFarland, Eric; Goldwasser, Isy; Boussie, Thomas; Turner, Howard; Van Beek, Johannes A. M.; Murphy, Vince; Powers, Timothy; et al. (Symyx Technologies; Weinberg, W. Henry; McFarland, Eric; Goldwasser, Isy; Boussie, Thomas; Turner, Howard; Van Beek, Johannes A. M.; Murphy, Vince; Powers, Timothy, USA). PCT Int. Appl. WO 9803521 A1 29 Jan 1998, 106 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C07F019-00. ICS: C07F015-00; C07B061-00; C08F004-70. APPLICATION: WO 97-US13312 22 Jul 1997. PRIORITY: US 96-16102 23 Jul 1996; US 96-28106 9 Oct 1996; US 96-29255 25 Oct 1996; US 97-35366 10 Jan 1997. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 29, 67, 78

Libraries of unsupported and supported metal-ligand compds., useful

for homogeneous and heterogeneous olefin polymn. catalysts, resp., are manufd. by combinatorial synthesis. Thus, complexation of diimine I with (DME)NiBr2 in 24 h in CH2Cl2 gave a product, and polymn. of ethylene gas 2.25 h in PhMe in the presence of MAO gave 1.38 g polymer.

Keywords

combinatorial synthesis metal complex polymn catalyst
bismethylphenylimino methoxyethoxyhexane nickel complex polymn catalyst
nickel diimine complex manuf polymn catalyst
olefin polymn catalyst combinatorial synthesis

Index Entries

Methyl aluminoxanes
cocatalyst; combinatorial synthesis and anal. of organometallic compds. and olefin polymn. catalysts
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Polymerization catalysts
Organometallic compounds
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combinatorial synthesis and anal. of organometallic compds. and olefin polymn. catalysts
Metallocenes
Alkadiene polymers
Polyacetylenes, preparation
in claims only; combinatorial synthesis and anal. of organometallic compds. and olefin polymn. catalysts
202405-46-7
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109-72-8, reactions
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9002-88-4
50981-41-4
combinatorial synthesis and anal. of organometallic compds. and olefin polymn. catalysts

128:35158
Readily supportable Group 3, 4 and lanthanide metal complexes for addition polymerization.
Spencer, Lee; Nickias, Peter N. (Dow Chemical Co., USA). U.S. US 5688880 A 18 Nov 1997, 16 pp. (English). (United States of America).
CODEN: USXXAM. CLASS: ICM: C08F004-643. NCL: 526127000.
APPLICATION: US 95-570262 11 Dec 1995. DOCUMENT TYPE:
Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 29

Metal complexes useful as olefin polymn. catalysts have a general formula of I; wherein L = a delocalized, p-bonded group that is bound to M, contg. up to 50 nonhydrogen atoms; M = a metal of Group 3, 4 or the Lanthanide series; Z = a covalently bound, divalent substituent of up to 50 non-hydrogen atoms having the formula, -(ER2)m-, wherein E = C, Si or Ge, R = C1-20 hydrocarbyl, and C1-20 hydrocarbyloxy, with the proviso that in at least one occurrence R is C1-20 hydrocarbyloxy, and m = 1-3 integer; Y = a divalent ligand group comprising N, P, O or S, the Y contg. up to 20 nonhydrogen atoms; X1 = a neutral Lewis base ligand having up to 20 non-hydrogen atoms; X2 = a monovalent, anionic moiety selected from hydride, halo, hydrocarbyl, silyl, germyl, hydrocarbyloxy, amide, siloxy, halohydrocarbyl, halosilyl, silylhydrocarbyl, and aminohydrocarbyl having up to 20 non-hydrogen atoms, or two X2 groups together form a divalent hydrocarbadiyl group; n = 0-3; and p = 0-2. Me4CpSi(Me)(iso-PrO)(tert-BuN)TiMe2 was prepd. and used together with trispentafluorophenylborane for polymn. of ethylene and 1-octene at 140°, giving a copolymer with efficiency 1,025,000 g-polymer/g-Ti.

Keywords

lanthanide supported metal complexes polymn catalyst
ethylene octene copolymer polymn catalyst
olefin polymn catalyst metal complex

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Group IIIB element complexes
complexes; readily supportable Group 3, 4 and lanthanide metal complexes for addn. polymn.
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Group IVB element complexes
Rare earth complexes
Polyolefins
readily supportable Group 3, 4 and lanthanide metal complexes for addn. polymn.
190372-50-0
190372-59-9
190372-64-6
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190372-54-4
190372-58-8
190372-61-3
190372-63-5
190372-65-7
190372-66-8
199593-04-9
199593-05-0
199593-06-1
readily supportable Group 3, 4 and lanthanide metal complexes for addn. polymn.

128:23225
Syntheses and characterization of transition metal complexes of 2,2'-biimidazole-containing polycarbonates.
Collier, Harvest L.; Cho, Il Young (Department of Chemistry, University of Missouri-Rolla, Rolla, MO 65401, USA). Korea Polym. J., 5(3), 185-190 (English) 1997 Polymer Society of Korea. CODEN: KPJOE2. ISSN: 1225-5947. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 29
Polycarbonates contg. 2,2'-biimidazole were used to prep. non-pendent, non-bridging polycarbonate supported transition metal complexes. The polymer-bound metal complexes were prepd. from the reaction of metal ion solns. with polycarbonates and from soln. transesterification between transition metal complexes of 1,1'-dihydroxyethyl-2,2'-biimidazole [HEB-M(II)] and di-Ph carbonate (DPC). Compared with uncomplexed polycarbonates, complexes of Zn(II) and Cu(II) formed by HEB-M(II)/DPC transesterification have low mol. wt. and thermal decompn. wt. loss of less than 3% at 200° in air. Metal polycarbonate complexes prepd. via the soln. route showed the influence to mol. steric factors than enhance d.p. and extent of metal binding.

Keywords

biimidazole polycarbonate metal complex prepn
transesterification biimidazole polycarbonate metal complexation

Index Entries

Polycarbonates, preparation
biimidazole-contg.; prepn. of Cu and Zn complexes of 2,2'-biimidazole-contg. polycarbonates via complexation and transesterification polymn. routes
Transesterification
prepn. of Cu and Zn complexes of 2,2'-biimidazole-contg. polycarbonates via complexation and transesterification polymn. routes
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prepn. of Cu and Zn complexes of 2,2'-biimidazole-contg. polycarbonates via complexation and transesterification polymn. routes

130:60216
Delivery and scavenging agents for combinatorial synthesis of organometallic compds.
Boussie, Thomas; Hall, Keith A.; Lapointe, Anne M.; Murphy, Vince; Powers, Timothy; Van Beek, Johannes A. M. (Symyx Technologies, USA). PCT Int. Appl. WO 9856796 A1 17 Dec 1998, 106 pp.
DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization).
CODEN: PIXXD2. CLASS: ICM: C07F019-00. ICS: C07B061-00; B01J019-00. APPLICATION: WO 1998-US10863 28 May 1998.
PRIORITY: US 1997-48987 9 Jun 1997; US 1997-898715 22 Jul 1997; US 1997-989739 12 Dec 1997. DOCUMENT TYPE: Patent CA
Section: 78 (Inorganic Chemicals and Reactions) Section cross-reference(s): 29, 35, 67
Delivery and scavenging agents are provided for the combinatorial synthesis of organometallic compds. in a soln. or suspension, where the agents are constructed from a solid support allowing for easy sepn. of unreacted reagents or unwanted materials from a synthesis reaction. Use of these solid supported agents also allows otherwise unfavorable reactions to be driven to completion using large excesses of reactants and minimizes the chances for competing bimol. side reactions in parallel or rapid serial synthesis. Thus, LNiBr2 (L = 1,4-dimesityl-2,3-dimethyl-1,4-diazabutadiene) was prepd. in 95% yield by reacting L with polystyrene-graft-poly(ethylene glycol) supported NiBr2.

Keywords

combinatorial prepn olefin polymn catalyst precursor
transition metal diazabutadiene complex polymn catalyst precursor
combinatorial prepn
polymer supported nickel palladium halide organometallic compd precursor

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181707-57-3
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217192-61-5
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for prepn. of polymer supported nickel bromide for use in combinatorial synthesis of organometallic compds.
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217193-07-2
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7646-79-9, preparation
7646-85-7, preparation
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7718-98-1
7758-94-3
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14267-08-4, polymer supported
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217193-02-7
support for metal halides and alkyls for use in combinatorial synthesis of organometallic compds.

130:169812
Supported diols, ligands containing two phosphorus atoms, and transition-metal complexes for catalysts.
Druliner, Joseph D.; Moloy, Kenneth Gene; Wang, Manxue (E.I. du Pont de Nemours and Company, USA). PCT Int. Appl. WO 9906146 A2 11 Feb 1999, 83 pp. DESIGNATED STATES: W: BR, CA, CN, ID, JP, KR, SG; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: B01J035-02. ICS: B01J031-16; B01J031-18; C07C253-10. APPLICATION: WO 1998-US15199 23 Jul 1998. PRIORITY: US 1997-54003 29 Jul 1997. DOCUMENT TYPE: Patent CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 23, 25, 67
Diols supported, esp. on polymers are reacted with ligands contg. 2 P atoms and optionally, transition-metal complexes to give catalysts useful for hydrocyanation of unsatd. org. compds., hydrogenation olefins, and hydrosilylation. Optionally, the transition metal complexes are used with the supported P ligands for the catalysts. These catalysts are insol. and nonvolatile, and the polymer-supported metal complexes exhibit low metal leaching. Thus, reaction of pentaerythritol with oxidized Merrifield's resin, and reaction of the intermediate with

PPh2Cl gave a polymer-supported ligand. Hydrocyanation of butadiene with HCN 3 h at 80° in the presence the resulting polymer-supported ligand and nickelbis(1,5-cyclooctadiene) gave 27.4% pentenenitrile with the 3-pentenenitrile-2-methyl-3-butene ratio being 1.29.

Keywords

polymer supported diol catalyst
pentaerythritol oxidized Merrifield resin adduct manuf catalyst
hydrosilylation polymer supported catalyst
olefin hydrogenation polymer supported catalyst
pentenenitrile manuf polymer supported catalyst
nickel biscyclooctadiene catalyst hydrocyanation butadiene
chlorophenylphosphine polymer supported catalyst
transition metal complex polymer supported catalyst
phosphorus ligand polymer supported catalyst

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100-58-3, reaction products with oxidized Merrifield's resin, di-Et tartrate, and phosphorus compds.
105-67-9, reaction products with Merrifield's resin and phosphorus compds.
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130:110742
Gas-phase polymerization process for olefins.
Maddox, Peter James; Williams, Peter Sefton (BP Chemicals Limited, UK). PCT Int. Appl. WO 9900431 A1 7 Jan 1999, 27 pp.
DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG.
(English). (World Intellectual Property Organization). CODEN: PIXXD2.
CLASS: ICM: C08F010-02. ICS: C08F004-607; C08F002-34.
APPLICATION: WO 97-GB1730 27 Jun 1997. DOCUMENT TYPE:
Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
The process is carried out in the presence of a supported transition metal catalyst (e.g., a constrained geometry transition metal complex supported on silica) and an activator. The process involves a prepolymn. step which may be performed in-situ and in particular the prepolymer may be prepd. in the dry phase. The prepolymn. step unables the activity of the catalyst to be improved.

Keywords

gas phase polymn catalyst olefin
propylene polymn catalyst gas phase
supported transition metal complex catalyst olefin polymn
ethylene butene polymn catalyst gas phase
butylamido cyclopentadienyl dimethylsilane titanium complex polymn catalyst
prepolymn in situ polymn catalyst olefin

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25213-02-9
gas-phase polymn. process for olefins using supported transition metal complex catalysts

130:140775
Manufacture of supported silasesquioxane-metal complex catalysts.
Van Santen, Rutger Anthony; Abbenhuis, Hendrikus Cornelius Louis; Krijnen, Simon; Hanssen, Rob Willem Johan Maria (Solvay Deutschland G.m.b.H., Germany). Ger. Offen. DE 19730376 A1 21 Jan 1999, 6 pp. (German). (Germany). CODEN: GWXXBX. CLASS: ICM: B01J031-00. ICS: B01J031-22; C07D301-12; C07B033-00; C07B041-00. ICI: B01J031-22, B01J101-90; B01J031-22, B01J101-42. APPLICATION: DE 97-19730376 16 Jul 1997. DOCUMENT TYPE: Patent CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 23, 27, 67
Supported catalysts based on complexes of silasesquioxanes and group 4-7 metals for oxidn. or epoxidn. of unsatd. hydrocarbons or alcs. have cryst. or amorphous supports based on silica with pore size 20-250 Å. The supports are optionally silylated before or after impregnating with the complexes. The catalysts exhibit high use life times, are thermally and air stable, and are easily removed from the products.

Keywords

silasesquioxane transition metal complex silica supported catalyst oxidn
silylated silica supported silasesquioxane transition metal complex catalyst oxidn
unsatd hydrocarbon epoxidn catalyst silica supported
alc oxidn catalyst silica supported

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80-10-4
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140225-52-1
159995-97-8
286-62-4
931-88-4
silica-supported silasesquioxane-transition metal complex
catalysts for oxidn. or epoxidn. of unsatd. hydrocarbons or
alcs.

131:63933
Polystyrene-supported thiosemicarbazone-transition metal
complexes: synthesis and application as heterogeneous catalysts.
Chettiar, K. Sivadasan; Sreekumar, K. (Department of Chemistry,
University of Kerala, Trivandrum 695 581, India). Polym. Int., 48(6),
455-460 (English) 1999 John Wiley & Sons Ltd. CODEN: PLYIEI.
ISSN: 0959-8103. DOCUMENT TYPE: Journal CA Section: 67
(Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 38, 78
Functionalized polymers are found to be highly efficient in immobilizing
transition metal ions. Crosslinked polystyrene supported Schiff's
base complexes of metal ions such as Fe(III), Co(II), Ni(II) and Cu(II) are
very effective as heterogeneous catalysts. The catalytic activity of
these metal complexes has been studied in the decompn. of H2O2 and
in the epoxidn. of cyclohexene and styrene. The reactions show a first
order dependence on the concn. of both the substrates and the catalyst.
The influence of the degree of crosslinking of the polymer support on
the rate of reactions has been studied. The metal complexes show low
catalytic activity at low crosslink d. (2% and 5%) but 10% crosslinked
resins show higher activity. A possible mechanism for the reactions is
suggested.

Keywords

polystyrene supported thiosemicarbazone transition metal complex
catalyst synthesis
hydrogen peroxide decompn catalyst polystyrene supported
thiosemicarbazone transition metal
cyclohexene epoxidn polystyrene supported thiosemicarbazone
transition metal complex
styrene epoxidn polystyrene supported thiosemicarbazone transition
metal complex

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20074-52-6, uses
22541-53-3, uses
polystyrene-supported thiosemicarbazone-transition metal
complexes and synthesis and application as
heterogeneous catalysts

131:146011
Supported liquid-phase catalyst comprising a metal and a chiral
sulfonated 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl.
Davis, Mark E.; Wan, Kam To (California Institute of Technology, USA).
U.S. US 5935892 A 10 Aug 1999, 9 pp. (English). (United States of
America). CODEN: USXXAM. CLASS: ICM: B01J031-00. NCL:
502156000. APPLICATION: US 1997-838730 10 Apr 1997.
PRIORITY: US 1994-199086 22 Feb 1994; US 1995-371880 12 Jan
1995. DOCUMENT TYPE: Patent CA Section: 45 (Industrial Organic
Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
An organometallic compd., preferably a metal complex of chiral
sulfonated 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl (BINAP), is
dissolved in a highly polar support phase having ³2 hydroxy groups,
esp. glycerol. The supported phase catalysts are useful for asym.
synthesis of optically active compds., including the asym.
hydrogenation of prochiral unsatd. carbon-heteroatom bonds, such as
ketones, imines and b-keto esters. The Ph groups of the BINAP ligand
are at least monosulfonated and the ligand overall is tetra- to
hexasulfonated. Ruthenium is the preferred metal. Thus, Et butyryl
acetate was asym. hydrogenated using a
[Ru(benzene)Cl[(R)-BINAP-4SO3Na]]Cl catalyst with a glycerol
supported phase on controlled-particle glass, giving the
corresponding chiral b-hydroxy carboxylic acid ester at 93.4%
enantiomeric excess.

Keywords

BINAP sulfonated metal complex supported catalyst
phenylphosphinobinaphthyl ruthenium sodium sulfonate glycerol catalyst
hydrogenation catalyst asym ethyl butyryl acetate
glass porous BINAP catalyst support

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7440-02-0, complexes with sulfonated BINAP
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98327-87-8, sulfonated, metal complexes
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catalyst; supported liq.-phase catalyst comprising a metal and a
chiral sulfonated
2,2'-bis(diphenylphosphino)-1,1'-binaphthyl
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prepn. and reaction of; supported liq.-phase catalyst comprising a
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supported liq.-phase catalyst comprising a metal and a
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support phase; supported liq.-phase catalyst comprising a metal
and a chiral sulfonated
2,2'-bis(diphenylphosphino)-1,1'-binaphthyl

131:158094
Supported catalytic activator for olefin polymerization catalysts.
Ward, David George; Carnahan, Edmund Malott (W.R. Grace & Co.
-Conn., USA). U.S. US 5939347 A 17 Aug 1999, 9 pp., Cont.-in-part of
U.S. Ser. No. 378,202, abandoned. (English). (United States of
America). CODEN: USXXAM. CLASS: ICM: C08F004-16. NCL:
502104000. APPLICATION: US 1995-544051 17 Oct 1995.
PRIORITY: US 1995-378202 25 Jan 1995. DOCUMENT TYPE: Patent
CA Section: 35 (Chemistry of Synthetic High Polymers)

Supported ionic catalyst activators for transition metal complex catalysts for olefin polymn. contain a direct chem. bond to a catalyst carrier to reduce resolubilization of heterogeneous catalysts, thereby minimizing reactor fouling, and to permit the use of supports having high concns. of chem. functionalities that would otherwise act as poisons to metallocene catalysts. The direct bond between the support and the catalyst activator provides a large support effect, allowing the properties of the activator to be altered by modifying the support and consequently, permitting the support to influence polymer morphol. The activator comprises a four coordinate anion having a direct chem. bond to a catalyst carrier, where the anion is a neutral, three coordinate compd., MR3, and a carrier having oxygen-contg. functionalities, where M is boron, tellurium, aluminum, gallium, or indium, and R can be the same or different and is alkyl, alkoxy, alkenyl, halogen-substituted alkyl, alkoxy, and alkenyl, aryl, aryl halide, and halogen, and a cation counter ion to said anion, where the cation is a protonated base or a Lewis acid capable of protonating or abstracting a moiety, such as an alkyl or aryl, from a transition metal-contg. catalyst precursor resulting in a cationic transition metal species. Thus, 10 mmol heptane soln. of B(C6F5)3 and 1.3 mL dimethylaniline were added to 200 mL heptane contg. 10.0 g Davison silica. The soln. was refluxed for 4 h yielding a white solid and blue filtrate. Anal. of the solid confirmed formation of a four-coordinate borate species. A slurry of 1 g borate in 500 mL heptane was mixed with 1 mmol triethylaluminum as a heptane soln. and 0.01 g Cp2ZrMe2. Polymn. at 35 psi ethylene and 40° yielded 6 g polyethylene in 0.25 h, corresponding to an activity of 290 g polyethylene/mmol Zr/h.

Keywords

ionic catalyst activator olefin polymn
metallocene catalyst olefin polymn ionic activator
Ziegler Natta olefin polymn catalyst activator

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7440-74-6, organo derivs.

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supported ionic catalyst activators for manuf. of

131:92984
Kinetic modelling of the active transport of copper(II) across liquid membranes using thiourea derivatives immobilized on microporous hydrophobic supports.
El Aamrani, Fatima Z.; Kumar, Anil; Sastre, Ana M. (Department of Chemical Engineering, ETSEIB, Universitat Politecnica de Catalunya, Barcelona E-08028, Spain). New J. Chem., 23(5), 517-523 (English) 1999 Royal Society of Chemistry. CODEN: NJCHE5. ISSN: 1144-0546. DOCUMENT TYPE: Journal CA Section: 66 (Surface Chemistry and Colloids)
The facilitated transport of CuII from chloride media through a flat-sheet supported liq. membrane (FSSLM) is studied, using thiourea derivs. as ionophores, as a function of hydrodynamic conditions, concn. of Cu (1-3 ´ 10-7 mol cm-3) and H+ (pH 0.1-2.5) in the feed soln., structure of carrier, carrier concn. (0.7-3 ´ 10-5 mol cm-3) in the membrane, strippant in receiving phase and support characteristics. A model is presented that describes the transport mechanism, consisting of diffusion through a feed aq. diffusion layer, a fast interfacial chem. reaction, diffusion of carrier and its metal complex through the org. membrane. The org. membrane diffusional resistance (Do) and aq. diffusional resistance (Da) were calcd. from the proposed model, and their values were 107 ´ 102 s cm-1 and 625 s cm-1, resp. The CuII flux across the membrane tends to reach a plateau at a high concn. of CuII or a low concn. of H+ owing to carrier satn. within the membrane, leading to a diffusion-controlled process. The values of the apparent diffusion coeff. (Doa) and limiting metal flux Jlim were calcd. from the limiting conditions and are 2.9 ´ 10-6 cm2 s-1 and 1.4 ´ 10-9 mol cm-2 s-1, resp. The values of the bulk diffusion coeff. (Do,b) and diffusion coeff. (Do) calcd. from the model were 2.6 ´ 10-6 cm2 s-1 and 1.2 ´ 10-6 cm2 s-1. The polymeric microporous solid support, Durapure, was selected throughout the study as it gave the best performance.

Keywords

copper transport flat sheet supported liq membrane kinetic modeling
thiourea deriv ionophore liq membrane copper transport kinetic
modeling

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Diffusion
diffusional resistance of flat-sheet supported liq. membranes
calcd. to study transport of copper(II)
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supported liq. membranes with thiourea derivs.
ionophores
Liquid membranes
flat-sheet supported; kinetic modeling of active transport of
copper(II) across flat-sheet supported liq. membranes with
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Ion transport
Ionophores
Permeability
kinetic modeling of active transport of copper(II) across flat-sheet
supported liq. membranes with thiourea derivs.
ionophores
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polymer-supported; kinetic modeling of active transport of
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4921-82-8
4949-94-4
5093-29-8
58328-36-2
68141-55-9
69186-17-0
90473-88-4
155207-39-9
155207-40-2
15158-11-9, processes
kinetic modeling of active transport of copper(II) across flat-sheet
supported liq. membranes with thiourea derivs.
ionophores

130:357650
Supported nickel catalysts: Preparation and characterisation of alumina-, molybdena-, silica-supported nickel, and the identification of reactive oxygen on these catalysts by exchange with isotopically labelled carbon dioxide.
David Jackson, S.; Willis, Janice; Kelly, Gordon J.; McLellan, Gavin D.; Webb, Geoff; Mather, Sue; Moyes, Richard B.; Simpson, Sydney; Wells, Peter B.; Whyman, Robin (Research, Technology and Eng. Group, Synetix, Billingham, Cleveland TS23 1LB, UK). Phys. Chem. Chem. Phys., 1(10), 2573-2580 (English) 1999 Royal Society of Chemistry. CODEN: PPCPFQ. ISSN: 1463-9076. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Nickel catalysts, supported on alumina, silica, and molybdena, have been prepd. by impregnation and co-crystn. In the precursor state the catalysts were characterized by UV-visible spectroscopy, thermogravimetric anal./DTA (TGA/DTA), and XPS. The nickel was principally in the 2+ oxidn. state with an octahedral coordination. However, the ligand sphere surrounding the nickel ion was sensitive to the support, indicating that the species on the different supports were not identical thus suggesting a metal complex-support interaction. Redn. was followed by temp. programmed redn. (TPR) and TGA, the results of which indicated that redn. and decompn. of nickel nitrate occurred simultaneously. X-ray diffraction (XRD) anal. revealed that, with the Ni/MoO3 sample, no hydrogen bronze was formed on redn. The reduced catalysts were characterized by carbon monoxide chemisorption, carbon dioxide chemisorption, and by reaction of buta-1,3-diene with dihydrogen. In the absence of a dihydrogen stream it was found that the catalysts adsorbed no carbon monoxide due the presence of sub-monolayer quantities of surface oxygen. The extent of the oxygen was quantified by exchange with isotopically labeled carbon dioxide. Differences in the electronic nature of the nickel between the Ni/MoO3 sample and the other catalysts were revealed by their behavior towards buta-1,3-diene hydrogenation.

Keywords

alumina supported nickel catalyst prepn characterization reactive oxygen
molybdena supported nickel catalyst prepn characterization reactive oxygen
silica supported nickel catalyst prepn characterization reactive oxygen

Index Entries

Hydrogenation catalysts
for butadiene; supported nickel catalysts and prepn. and characterization of alumina-, molybdena-, silica-supported nickel, and the identification of reactive oxygen on these catalysts by exchange with isotopically labeled carbon dioxide
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Exchange reaction
Thermal reduction
Valence
supported nickel catalysts and prepn. and characterization of alumina-, molybdena-, silica-supported nickel, and the identification of reactive oxygen on these catalysts by exchange with isotopically labeled carbon dioxide
106-99-0, reactions
hydrogenation of; supported nickel catalysts and prepn. and characterization of alumina-, molybdena-, silica-supported

nickel, and the identification of reactive oxygen on these catalysts by exchange with isotopically labeled carbon dioxide
1313-27-5, uses
1344-28-1, uses
7440-02-0, uses
7631-86-9, uses
124-38-9, reactions
630-08-0, reactions
7782-44-7, reactions
supported nickel catalysts and prepn. and characterization of alumina-, molybdena-, silica-supported nickel, and the identification of reactive oxygen on these catalysts by exchange with isotopically labeled carbon dioxide

130:97131
New enantioselective heterogeneous catalysts.
Tanielyan, Setrak K.; Augustine, Robert L. (Center for Applied Catalysis, Seton Hall University, South Orange, NJ 07079, USA).
Chem. Ind. (Dekker), 75(Catalysis of Organic Reactions), 101-113 (English) 1998 Marcel Dekker, Inc. CODEN: CHEIDI. ISSN: 0737-8025. DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
A method was developed for anchoring preformed homogeneous catalysts to a variety of support materials and various reactions were studied. The hydrogenation of methyl-2-acetamidoacrylate to 2-acetamido-acrylic acid was carried out using Rh(COD)(DIPAMP)BF4 on a modified Al2O3 support. The hydrogenation of di-Me itaconate was carried out using Ru(BINAP)(NEt3)Cl2 on Montmorillonite K. The allylation of sodium di-Me malonate by 2-butenyl acetate was carried out using Pd(R,R-BINAP)Cl2 on modified Norite carbon. The hydroformylation of 1-hexene was carried out using Rh(P(C6H5)3)3Cl on modified Montmorillonite K. On reuse, the supported species usually exhibited an increase in activity and selectivity which was maintained on re-use in up to fifteen cycles and catalyst leaching was not detected.

Keywords

enantioselective heterogeneous catalyst support activity leaching prevention
hydrogenation catalyst supported metal complex activity reuse
allylation hydroformylation catalyst metal complex support reuse

Index Entries

Allylation
Allylation catalysts
Catalyst supports
Hydroformylation
Hydroformylation catalysts
Selective hydrogenation
Stereoselective hydrogenation catalysts
enantioselective metal complex catalysts anchored on various supports for hydrogenation and hydroformylation and allylation reactions
14694-95-2
103745-89-7
115826-95-4
136686-38-9
3619-02-1
19914-36-4
592-41-6, reactions

617-52-7
628-08-0
18424-76-5
35356-70-8
enantioselective metal complex catalysts anchored on various supports for hydrogenation and hydroformylation and allylation reactions
1318-93-0, uses
potassium-exchanged, support; enantioselective metal complex catalysts anchored on various supports for hydrogenation and hydroformylation and allylation reactions
1344-28-1, uses
support; enantioselective metal complex catalysts anchored on various supports for hydrogenation and hydroformylation and allylation reactions

130:110751
Supported polymerization catalyst not requiring aluminoxane activator for olefins.
Sharp, Christopher (BP Chemicals Limited, UK). PCT Int. Appl. WO 9902570 A1 21 Jan 1999, 17 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HR, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-60. ICS: C08F010-02. APPLICATION: WO 98-GB1961 3 Jul 1998. PRIORITY: GB 97-14387 8 Jul 1997; GB 97-14388 8 Jul 1997. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67
The title supported catalyst system is made by optionally pretreating a support followed by addn. of a neutral metal complex/activator soln., and removing solvent from the supported catalyst to give a powder complex. The metal complex may be a metallocene in particular a complex with trifluoromethanesulfonate ligands and the activator is a Lewis acid, optionally combined with a Ziegler component.

Keywords

metallocene Ziegler component supported polymn catalyst
silica support polymn catalyst
alkylating agent support polymn catalyst
Lewis acid activator polymn catalyst

Index Entries

Catalyst supports
(pretreated)silica; supported polymn. catalyst not requiring aluminoxane activator for olefins
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supported polymn. catalyst not requiring aluminoxane activator for olefins
75-24-1
100-99-2, uses
507-20-0
999-97-3
1109-15-5
1191-47-5
3087-37-4
7550-45-0, uses

94728-52-6
component for supported polymn. catalyst not requiring
aluminoxane activator for olefins
7631-86-9, uses
support; supported polymn. catalyst not requiring aluminoxane
activator for olefins
9002-88-4
25213-02-9
supported polymn. catalyst not requiring aluminoxane activator for
olefins

130:32159
Transition Metal Complex-Doped Hydroxyapatite Layers on Porous
Silicon.
Li, Xin; Coffer, Jeffery L.; Chen, Yandong; Pinizzotto, Russell F.; Newey,
Jon; Canham, Leigh T. (Department of Chemistry, Texas Christian
University, Fort Worth, TX 76129, USA). J. Am. Chem. Soc., 120(45),
11706-11709 (English) 1998 American Chemical Society. CODEN:
JACSAT. ISSN: 0002-7863. DOCUMENT TYPE: Journal CA Section:
78 (Inorganic Chemicals and Reactions)
The encapsulation of the transition metal complexes cis-Pt(NH3)2Cl2,
Ru(bpy)32+, and Ru(phen)32+ within layers of hydroxyapatite on a porous
Si/Si substrate are described. These specific complexes were
selected as a consequence of their biol. activity (cis-Pt(NH3)2Cl2) or
polynucleotide binding ability (Ru(bpy)32+ and Ru(phen)32+). The
complex-doped hydroxyapatite/porous Si/Si materials were
characterized by SEM, energy-dispersive x-ray spectroscopy,
secondary ion mass spectrometry, and photoluminescence
spectroscopy. It is possible to exercise some control of the release of
a given complex into the surrounding medium through thermal heating
of the complex-doped hydroxyapatite/porous Si/Si structure.

Keywords

transition metal complex doped hydroxyapatite prepn
platinum ammine chloro complex doped hydroxyapatite prepn
ruthenium diimine complex doped hydroxyapatite prepn
encapsulation transition metal complex hydroxyapatite prepn

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Luminescence
of ruthenium/bipyridine or phenanthroline complex-doped
hydroxyapatite/porous Si/Si substrate
Encapsulation
of transition metal complexes cis-Pt(NH3)2Cl2, Ru(bpy)32+, and
Ru(phen)32+ within layers of hydroxyapatite on a porous
Si/Si substrate
1306-06-5
14323-06-9
15663-27-1
23570-43-6
for prepn. of transition metal complex-doped hydroxyapatite layers
on porous silicon
15158-62-0, -doped hydroxyapatite, silicon-supported
15663-27-1, -doped hydroxyapatite, silicon-supported
22873-66-1, -doped hydroxyapatite, silicon-supported
prepn. and diffusion of complex to aq. medium
1306-06-5, doped with platinum ammine chloro, ruthenium bipyridine or
ruthenium phenanthroline complexes, silicon supported
prepn. of

130:138982
Polymer anchored palladium(II)-diaminopropane complexes: synthesis and catalytic behavior.
John, Jacob; Dalal, M. K.; Ram, R. N. (Faculty of Science, Chemistry Department, M.S. University of Baroda, Baroda 390 002, India). J. Mol. Catal. A: Chem., 137(1-3), 183-191 (English) 1999 Elsevier Science B.V. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 35, 67
Styrene-divinylbenzene copolymer with 5% and 15% crosslinking were synthesized by suspension polymn., chloromethylated, and treated with H2NCHMeCH2NH2 for introduction of the ligand. The polymer beads modified with ligand were kept in contact with PdCl2 to form the metal complex on the surface of the polymer. The catalysts thus prepd. were characterized by various techniques such as FTIR, reflectance UV-vis spectroscopy, SEM, EPR, TGA and ESCA. Physicochem. properties such as moisture content, bulk d., surface area by BET method and swelling with different solvents were studied. The catalytic activity of synthesized catalysts was tested for hydrogenation of cyclohexene as a model reaction. Kinetic studies were carried out by varying different parameters. Activation energy and entropy were calcd. The recycling efficiency of the catalysts was also studied. A probable reaction mechanism was proposed.

Keywords

polymer supported palladium diaminopropane complex catalyst hydrogenation kinetics mechanism

Index Entries

IR spectra
Fourier-transform; prepn. of polymer-supported palladium-diaminopropane complex as hydrogenation catalyst
Reflection spectra
UV-visible; prepn. of polymer-supported palladium-diaminopropane complex as hydrogenation catalyst
Density
bulk; prepn. of polymer-supported palladium-diaminopropane complex as hydrogenation catalyst
Catalysts
polymer-supported; prepn. of polymer-supported palladium-diaminopropane complex as hydrogenation catalyst
Activation energy
Activation entropy
ESR (electron spin resonance)
Hydrogenation
Hydrogenation catalysts
Hydrogenation kinetics
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Surface area
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Thermogravimetric analysis
X-ray photoelectron spectra
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reflection; prepn. of polymer-supported palladium-diaminopropane complex as hydrogenation catalyst
9003-70-7, modified with diaminopropane-palladium complex

27952-37-0, polymer-bound
110-83-8, reactions
prepn. of polymer-supported palladium-diaminopropane complex
as hydrogenation catalyst

131:144978
Preparing metal oxide-supported olefin polymerization catalyst.
Jeremic, Dusan; Brown, Stephen John; McKay, Ian (Nova Chemicals (International) S.A., Switz.). PCT Int. Appl. WO 9940125 A1 12 Aug 1999, 22 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BG, BR, BY, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, JP, KE, KG, KP, KR, KZ, LK, LT, LV, MX, NO, NZ, PL, PT, RO, RU, SD, SG, SI, SK, TJ, TM, TR, UA, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-64. ICS: C08F010-00. APPLICATION: WO 1999-CA28 18 Jan 1999. PRIORITY: CA 1998-2228923 6 Feb 1998. DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 29, 67
A catalyst which has high activity and is useful in slurry or gas phase olefin polymn. is prepd. by depositing a combination of an organometallic complex of a Group 4 metal and an ionic activator [such as triphenylcarbenium tetrakis(pentafluorophenyl)borate] on a metal oxide support. The organometallic complex is unbridged and has a cyclopentadienyl ligand, a phosphinimine ligand and an activatable ligand. The metal oxide support is pre-treated with an Al alkyl such as triisobutyl aluminum, in an amt. which is at least equiv. to the molar concn. of surface hydroxyls on the support. Ethylene was polymd. in the presence of cyclopentadienyl titanium tris(tert-butyl)phosphinimine dichloride and N,N-dimethylaniliniumtetrakispentafluorophenyl borate mole ratio 1:1, on a triisobutyl aluminum-treated silica support at 90°.

Keywords

polyethylene manuf metallocene catalyst
borate activator metallocene catalyst
cyclopentadienyl titanium phosphenimine metallocene catalyst
aluminum treated silica support catalyst

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Metallocene polymerization catalysts
metal oxide supported Group 4 metal complex for olefin polymn.
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100-99-2, uses
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118612-00-3
136040-19-2
219792-35-5
9002-88-4
metal oxide supported Group 4 metal complex for olefin polymn.
7631-86-9, uses
support; metal oxide supported Group 4 metal complex for olefin polymn.

131:50086
Aging of precursors of supported platinum catalysts.
Choren, Eduardo; Homez, Isabel; Zarraga, Jeannette; Buriel, Marianella (Centro de Superficies y Catalisis, Facultad de Ingenieria,

Universidad del Zulia, Maracaibo 4003A, Venez.). Rev. Tec. Fac. Ing., Univ. Zulia, 22(1), 18-27 (Spanish) 1999 Universidad del Zulia, Facultad de Ingenieria. CODEN: RTFZDH. ISSN: 0254-0770.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
The behavior of alumina supported platinum catalysts is different from those supported on silica. The UV-Vis. diffuse reflectance and catharometric and gravimetric temp. programmed redn. study allowed the characterization of precursors (the support impregnated with the metal complex, without other treatment). These ones present, also, different properties that change during aging: the adsorption of the complex (H2PtCl6) supported on silica is relatively weak (it is washable by water), it conserves octahedric symmetry and suffers extensive exchange of chloro ligand with support hydroxo or aquo. That adsorbed on alumina suffers an extensive symmetry destruction and a lesser ligand exchange. Evidences are collected that metal conserves a strong dispersing interaction after redn.

Keywords

aging chloroplatinic acid precursor supported platinum catalyst

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Aging (materials)
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aging of precursors of supported platinum catalysts
1344-28-1, uses
7631-86-9, uses
7440-06-4, uses
16941-12-1
aging of precursors of supported platinum catalysts

130:226906
Catalyst for reduction decomposition of nitrogen monoxide from exhaust gas, fixed catalyst using it, its usage, its activation, and regeneration of porous support for it.
Miyamoto, Makoto; Hanazato, Yoshio (Mitsubishi Electric Corp., Japan). Jpn. Kokai Tokkyo Koho JP 11057487 A2 2 Mar 1999 Heisei, 12 pp. (Japanese). (Japan). CODEN: JKXXAF. CLASS: ICM: B01J031-16. ICS: B01D053-94; B01D053-96; B01J031-40; B01J035-10; B01J038-02. APPLICATION: JP 97-214617 8 Aug 1997. DOCUMENT TYPE: Patent CA Section: 59 (Air Pollution and Industrial Hygiene) Section cross-reference(s): 29, 67
The redn. catalyst is a coordination compd. composed of a metal ion and a compd. obtained by dehydration condensation between salicyl aldehyde and ethylenediamine. The used redn. catalyst is activated by heat-treating at 220-250° for 15 min to 72 h. The fixed catalyst composed of the above redn. catalyst supported on a porous support used at room temp. to 250° or under light irradn. at 200-700 nm is also claimed. In the fixed catalyst, the porous support is regenerated by the following steps: (1) heat-treating the fixed catalyst, (2) dipping into an acidic soln., preferably into a H2O2 soln. and then a strong acid soln., and (3) dipping into H2O and drying. The redn. catalyst can decomp. NO in high efficiency at low temp. even without a reducing agent.

Keywords

nitrogen oxide redn catalyst exhaust gas
activation nitrogen oxide redn catalyst
regeneration porous support redn catalyst
salicyl aldehyde ethylenediamine metal complex catalyst

Index Entries

Heat treatment
activation of catalyst for redn. decompn. of NO from exhaust gas
Exhaust gases (engine)
Reduction catalysts
metal complex with reaction product of salicyl aldehyde and ethylenediamine as catalyst for redn. decompn. of NO from exhaust gas
Porous glass
support; metal complex with reaction product of salicyl aldehyde and ethylenediamine as catalyst for redn. decompn. of NO from exhaust gas
14167-18-1
90-02-8, reactions
107-15-3, reactions
10102-43-9, processes
metal complex with reaction product of salicyl aldehyde and ethylenediamine as catalyst for redn. decompn. of NO from exhaust gas
7647-01-0, uses
7697-37-2, uses
7722-84-1, uses
regeneration of catalyst for redn. decompn. of NO from exhaust gas

130:118789
First derivative spectrophotometric determination of palladium after column preconcentration with 1-(2-pyridylazo)-2-naphthol supported on naphthalene.
Taher, Mohammand Ali; Puri, Swati; Gupta, Mahinder Kumar; Puri, Bal Krishan (Chemistry Department, Shahid Bahonar University, Kerman, Iran). Indian J. Chem. Technol., 5(5), 321-326 (English) 1998 National Institute of Science Communication, CSIR. CODEN: ICHTEU. ISSN: 0971-457X. DOCUMENT TYPE: Journal CA Section: 79 (Inorganic Analytical Chemistry) Section cross-reference(s): 9
A solid chelating material, 1-(2-pyridylazo)-2-naphthol (PAN) supported on naphthalene provides a rapid and highly selective means of preconcg. Pd from a large aq. vol. (~500 mL) of its synthetic samples. Pd is quant. retained on this adsorbent in the pH range 3.1-5.0 when its aq. soln. is passed on it at a flow rate of 1-8 mL/min. The solid mass consisting of the adsorbent along with the metal complex is dissolved out of the column with 5 mL of DMF and the metal is detd. by 1st deriv. spectrophotometry. The calibration curve is linear over the concn. range 0.3-200 mg of Pd in 5 mL of the final DMF soln. by measuring the distance dA/dl between l1 (680) and l2 (650). Eight replicate detns. of a sample soln. contg. 20 mg of Pd gave a mean intensity (peak to peak signal between l1 and l2) 0.138 with a relative std. deviation of 1.5%. The sensitivity of the method is 0.0318 [(dA/dl)/(mg/mL)] found from the slope of the calibration curve and detection limit is 0.04 mg/mL (signal to noise ratio = 2). Various parameters such as pH effect, flow rate, vol. of aq. phase and the interference of anions and cations on the estn. of Pd were evaluated and the developed method is highly selective and sensitive and applied to the detn. of trace amts. of Pd in various complex samples corresponding to std. samples.

Keywords

deriv spectrophotometric detn palladium
pyridylazonaphthol supported naphthalene palladium column preconcn

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Spectrophotometry
first deriv. spectrophotometric detn. of palladium after column preconcn. with 1-(2-pyridylazo)-2-naphthol supported on naphthalene
Alloys, analysis
first deriv. spectrophotometric detn. of palladium in alloys after column preconcn. with 1-(2-pyridylazo)-2-naphthol supported on naphthalene
Biological materials
first deriv. spectrophotometric detn. of palladium in biol. samples after column preconcn. with 1-(2-pyridylazo)-2-naphthol supported on naphthalene
7440-05-3, analysis
85-85-8
91-20-3, analysis
first deriv. spectrophotometric detn. of palladium after column preconcn. with 1-(2-pyridylazo)-2-naphthol supported on naphthalene

131:9922
A Surface Site as Polydentate Ligand of a Metal Complex: Density Functional Studies of Rhenium Subcarbonyls Supported on Magnesium Oxide.
Hu, Anguang; Neyman, Konstantin M.; Staufer, Markus; Belling, Thomas; Gates, Bruce C.; Roesch, Notker (Theoretische Chemie, Technische Universitaet Muenchen, Garching D-85747, Germany). J. Am. Chem. Soc., 121(18), 4522-4523 (English) 1999 American Chemical Society. CODEN: JACSAT. ISSN: 0002-7863.
DOCUMENT TYPE: Journal CA Section: 66 (Surface Chemistry and Colloids) Section cross-reference(s): 29
The authors examd. the structural model with the help of quantum chem. calcns. to (i) justify the possibility of forming Re(CO)3/MgO complexes (ii) det. their structural and spectroscopic parameters in more detail and (iii) study whether the Re-Osurf bonds are indeed sufficiently strong and similar to common coordination bonds to support the concept of a surface site as a polydentate ligand. To the best of knowledge this work is the 1st computational study of oxide-supported organometallic species bonded via the metal center. Adsorption complexes of Re(CO)3 and Re(CO)3+ on cationic defect sites (Vs centers) of MgO were studied with the aid of a model cluster d. functional (DF) method. Adsorption sites were considered representing both dehydroxylated and hydroxylated MgO surfaces with 3 neighboring symmetry-equiv. O atoms exposed. The supported complexes Re(CO)3{OMg}3 and Re(CO)3{HOMg}3 proposed earlier indeed correspond to stable configurations of the cluster models. The calcd. geometric and vibrational parameters agree well with available exptl. results.

Keywords

metal complex chemisorbed rhenium subcarbonyl magnesium oxide DFT

Index Entries

Chemisorbed substances
Complexation
Coordination (structure)
d. functional studies of adsorption complexes of Re(CO)3 and Re(CO)3+ on cationic defect sites of MgO
Organometallic compounds
Oxides (inorganic), properties
first computational study of oxide-supported organometallic species bonded via metal center

1309-48-4, properties
109996-17-0
187032-06-0
d. functional studies of adsorption complexes of Re(CO)3 and Re(CO)3+ on cationic defect sites of MgO

130:147740
Transition-metal ligands bound onto the micelle-templated silica surface.
Brunel, Daniel; Bellocq, Nathalie; Sutra, Pierre; Cauvel, Anne; Lasperas, Monique; Moreau, Patrice; Di Renzo, Francesco; Galarneau, Anne; Fajula, Francois (Laboratoire de Materiaux Catalytiques et Catalyse en Chimie Organique, UMR-CNRS-5618, Ecole Nationale Superieure de Chimie, Montpellier 34296, Fr.).
Coord. Chem. Rev., 178-180(Pt. 2), 1085-1108 (English) 1998
Elsevier Science S.A. CODEN: CCHRAM. ISSN: 0010-8545.
DOCUMENT TYPE: Journal; General Review CA Section: 78 (Inorganic Chemicals and Reactions) Section cross-reference(s): 38
A review with 133 refs. on the design of immobilized transition metal ligands on solid supports. Discussion includes transition metals immobilized on polymers, transition metal complexes entrapped inside porous metal oxides, and transition metal complexed ligands anchored onto micelle-templated silicas. After an overview of some results concerning ligand anchorage on polymeric supports and encapsulation of transition-metal complexes inside layered or zeolitic minerals, the grafting of ligands onto the silicic wall surface of micelle-templated silicas (MTS) is reported. MTS silicas featuring a regular mesoporous system of pore-monodispersed size and exhibiting larger pores than zeolites, provide a new opportunity to allow anchorage of org. moieties through the silanation procedure. Mn(III) N,N'-bis(3-salicylidenaminopropyl)amine (Salpr) and N,N'-bis[3-(3,5-di-tert-butylsalicylidenaminopropyl)amine] (tSalpr) complexes bound onto the MTS surface are active in epoxidn. reaction using PhIO as O donor. Anchorage of (1R,2S)-ephedrine was also studied with the aim to obtain benefit from the MTS structure effect. These new supported chiral catalysts are active in alkylation of benzaldehyde with diethylzinc although less enantioselective than the corresponding homogeneous catalyst. The effect of dispersion of active sites and of surface passivation was studied and discussed in terms of the nature of the support surface.

Keywords

review design transition metal complex immobilized solid support
polymer supported transition metal complex design review
metal oxide porous entrapped transition metal complex design review
silica micelle templated transition metal complexed ligand anchored review

Index Entries

Oxides (inorganic), uses
intercalated with transition metal complexes; design of
Transition metal complexes
on solid supports; design of immobilized
Polymers, uses
support; transition metal immobilization on
7631-86-9, uses
design of transition metal complexes ligands bound onto micelle-templated

130:95980
Supported biscyclopentadienyl metal complexes as polymerization catalysts.
Nickias, Peter N.; Spencer, Lee (The Dow Chemical Company, USA).
U.S. US 5854362 A 29 Dec 1998, 10 pp. (English). (United States of America). CODEN: USXXAM. CLASS: ICM: C08F004-645. NCL: 526130000. APPLICATION: US 95-570261 11 Dec 1995.
DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67

Supported catalysts for olefin polymn. comprise (1) metal complexes I wherein: L independently is a delocalized, p-bonded group that is bound to M, contg. up to 50 nonhydrogen atoms; M is a Group 3, 4 or Lanthanide metal; Z is a covalently bound, divalent substituent of up to 50 non-hydrogen atoms having the formula, --(ER2)m--, wherein E is carbon, silicon or germanium, R is selected from C1-20 hydrocarbyl, and C1-20 hydrocarbyloxy, with the proviso that in at least one occurrence R is C1-20 hydrocarbyloxy, and m is 1 to 3; X' is a neutral Lewis base ligand having up to 20 non-hydrogen atoms; X" is a monovalent, anionic moiety selected from hydride, halo, hydrocarbyl, silyl, germyl, hydrocarbyloxy, amide, siloxy, halohydrocarbyl, halosilyl, silylhydrocarbyl, and aminohydrocarbyl having up to 20 non-hydrogen atoms, or two X" groups together form a divalent hydrocarbadiyl or neutral hydrocarbon group; n is a no. from 0 to 3; and p is an integer from 0 to 2, (2) cocatalysts, and (3) Al- or Si-contg. substrate. Isopropoxymethylsilanebis(tetramethylcyclopentadienyl)zirconium dichloride was prepd. and used in polymn. of ethylene and 1-octene.

Keywords

isopropoxymethylsilane bistetramethylcyclopentadienyl zirconium dichloride catalyst olefin polymn
supported biscyclopentadienyl metal complex polymn catalyst

Index Entries

Polymerization catalysts
Metallocenes
supported biscyclopentadienyl metal complexes as polymn. catalysts
1109-15-5
cocatalyst; supported biscyclopentadienyl metal complexes as polymn. catalysts
190258-02-7
26221-73-8
999-89-3
190258-00-5
190258-01-6
75-79-6
10026-11-6
207122-13-2
supported biscyclopentadienyl metal complexes as polymn. catalysts

131:359667
Computer simulation of metal complex dissociation during free metal determination using anodic stripping voltammetry.
Tao, Shu; Hu, Haiying (Department of Urban and Environmental Sciences, Peking University, Beijing 100871, Peop. Rep. China).
Huanjing Kexue Xuebao, 19(6), 585-590 (Chinese) 1999 Kexue Chubanshe. CODEN: HKXUDL. ISSN: 0253-2468. DOCUMENT TYPE: Journal CA Section: 79 (Inorganic Analytical Chemistry)
The processes of transformation and mass transfer occurring in

stagnant film during deposition period of ASV measurement for free metals were simulated using computer. The results revealed that the dissocn. of metal-complex in the stagnant film is the primary reason causing the overestimation of free metal concn. using ASV technique. The influences of a no. of parameters on the magnitude of the overestimation error were investigated. The computer-simulated results were supported by exptl. data.

Keywords

voltammetry metal detn complex dissocn simulation

Index Entries

Anodic stripping voltammetry
Simulation and Modeling, physicochemical
Metals, analysis
computer simulation of metal complex dissocn. during free metal detn. by anodic stripping voltammetry

131:322983
Synthesis and electronic properties of conjugated polymers based on rhenium or ruthenium dipyridophenazine complexes.
Chan, Wai Kin; Ng, Po King; Gong, Xiong; Hou, Sijian (Department of Chemistry, University of Hong Kong, Hong Kong). J. Mater. Chem., 9(9), 2103-2108 (English) 1999 Royal Society of Chemistry. CODEN: JMACEP. ISSN: 0959-9428. DOCUMENT TYPE: Journal CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 73
Two series of luminescent conjugated polymers based on rhenium(I) or ruthenium(II) dipyridophenazine complexes were synthesized by the palladium-catalyzed coupling reaction using divinylbenzene and arom. dibromides as the monomers. From the photoluminescence spectra, an energy transfer process between the conjugated backbone and the metal complexes is proposed. The ruthenium-contg. polymers were fabricated into light emitting devices because of their better film forming qualities. The electroluminescence (EL) of the polymers originated from the emission due to the p*-p or p*-d transitions. Depending on the metal complex content, the polymers exhibit different absorption and EL spectra. The devices exhibit a turn-on voltage of 10 V and external quantum efficiency of 0.6%. From the cyclic voltammetry results, an addnl. oxidn. couple was obsd. after the incorporation of the ruthenium complex which may contribute to the charge transport process. This was further supported by the charge mobilities measurement in which the electron and hole mobilities of the polymers are enhanced by the metal complex and are of the order of 10-4 cm2 V-1 s-1.

Keywords

dipyridophenazine metal complex conjugated polymer
rhenium dipyridophenazine complex conjugated polymer
ruthenium dipyridophenazine complex conjugated polymer
electronic property metal dipyridophenazine complex polymer
light emitting diode metal contg polymer

Index Entries

Polymers, preparation
conjugated; synthesis and electronic properties of conjugated polymers based on rhenium or ruthenium dipyridophenazine complexes, dibromodihexylquinoxaline and divinylbenzene

Polymerization
palladium-catalyzed coupling reaction of rhenium or ruthenium dipyridophenazine complexes, dibromodihexylquinoxaline and divinylbenzene
Cyclic voltammetry
Electroluminescent devices
Electron mobility
Hole mobility
Luminescence
Luminescence, electroluminescence
UV and visible spectra
Poly(arylenealkenylenes)
synthesis and electronic properties of conjugated polymers based on rhenium or ruthenium dipyridophenazine complexes, dibromodihexylquinoxaline and divinylbenzene
248280-95-7
monomer; for synthesis of conjugated polymers
3375-31-3
polymn. catalyst; in synthesis of conjugated polymers based on rhenium or ruthenium dipyridophenazine complexes, dibromodihexylquinoxaline and divinylbenzene
200503-12-4
reactant; in synthesis of rhenium complex as monomer for prepn. of conjugated polymers
14099-01-5
reactant; in synthesis of rhenium phenazine complex as monomer for prepn. of conjugated polymers
248243-63-2
248243-62-1
248243-64-3
248280-96-8
248280-97-9
synthesis and electronic properties of conjugated polymers based on rhenium or ruthenium dipyridophenazine complexes, dibromodihexylquinoxaline and divinylbenzene

131:243295
Chemistry in interphases-a new approach to organometallic syntheses and catalysis.
Lindner, Ekkehard; Schneller, Theodor; Auer, Friedrich; Mayer, Hermann A. (Institut fur Anorganische Chemie der Universitat, Tubingen D-72076, Germany). Angew. Chem., Int. Ed., 38(15), 2155-2174 (English) 1999 Wiley-VCH Verlag GmbH. CODEN: ACIEF5. ISSN: 1433-7851. DOCUMENT TYPE: Journal; General Review CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 22, 35, 67
A review, with ~146 refs. Processes in which a stationary and a mobile component penetrate each other on a mol. level exist in many fields of current chem. research such as chromatog. or solid-phase syntheses. Such systems are designated as interphases and constitute a large area of interdisciplinary research. They connect inorg., org., and physicochem. disciplines with many aspects in applied and exptl. physics. Modern developments in microscopic and spectroscopic methods (e.g. solid-state NMR spectroscopy) offer a unique possibility to get detailed insight into the structures, properties, and chem. of new polymeric materials. Concomitantly they stimulate the development of advanced materials for optimized interphases. In the past three decades transition metal complexes bound to polymeric supports have attracted great interest, since they promise to combine the advantages of homogeneous catalysis with the easy separability of heterogeneous systems. However, such immobilized catalysts hardly ever met the expectations, mostly due to the high degree of metal loss during the reaction (leaching). Also, the optimization of such systems was often

limited to trial-and-error methods due to the lack of knowledge of the structure and environment of the reactive centers and the polymers. Chem. in interphases offers a new approach to organometallic syntheses and catalysis, since a subtle design of the hybrid-polymer matrix allows to suppress the detrimental influence of the support. An interphase represents a state which, in an extreme case, may be similar to that of a soln. Thus catalysts are available which provide favorable activities in the hydrogenation and hydroformylation of unsatd. substrates and the copolymn. of alkenes with CO without any marked leaching of the catalytic active transition metal centers.

Keywords

review organometallic synthesis catalysis interphase chem
transition metal complex polymer bound catalysis interphase chem review
hydrogenation catalyst transition metal complex polymer bound review
hydroformylation catalyst transition metal complex polymer bound review
copolymn alkene carbon monoxide catalyst polymer bound complex review

Index Entries

Catalysis
Hydroformylation catalysts
Hydrogenation catalysts
Organometallic compounds
chem. in interphases as new approach to organometallic syntheses and catalysis
Polymerization catalysts
copolymn. catalysts; chem. in interphases as new approach to organometallic syntheses and catalysis
Transition metal complexes
polymer-bound; chem. in interphases as new approach to organometallic syntheses and catalysis
Polymer-supported reagents
transition metal complexes; chem. in interphases as new approach to organometallic syntheses and catalysis

130:157569
Selective reduction of nitrogen oxides by hydrocarbons on heteropolyacid catalysts.
Vorontsova, I. V.; Korovchenko, P. A.; Gazarov, R. A. (GANG im. I. M. Gubkina, Moscow 117917, Russia). Ross. Khim. Zh., 42(1-2), 186-190 (Russian) 1998 Rossiiskoe Khimicheskoe Obshchestvo im. D. I. Mendeleeva. CODEN: RKZHEZ. ISSN: 1024-6215. DOCUMENT TYPE: Journal CA Section: 59 (Air Pollution and Industrial Hygiene) Section cross-reference(s): 51, 67
The results are presented of the development and study of a new type of supported metal-block catalysts for exhaust gases based on mixed heteropolyacid complexes of the 12th row with the d-metals within the inner coordination sphere (including platinoids). Based on these results, a series of mixed heteropolyacid complexes contg. transition metals (Ni, Cr, Co, Pt, Pd, Rh etc.) was synthesized and tested in the reaction of NOx redn. by hydrocarbons. In terms of activity and stability, the new catalysts are superior to the best of the available catalysts.

Keywords

nitrogen oxide selective redn hydrocarbon heteropolyacid metal complex catalyst

Index Entries

Exhaust gases (engine)
Reduction catalysts
Coordination compounds
Hydrocarbons, reactions
selective redn. of nitrogen oxides by hydrocarbons on
heteropolyacid-metal complex catalysts
7440-02-0, heteropolyacid complexes
7440-05-3, heteropolyacid complexes
7440-06-4, heteropolyacid complexes
7440-16-6, heteropolyacid complexes
7440-47-3, heteropolyacid complexes
7440-48-4, heteropolyacid complexes
11104-93-1, processes
selective redn. of nitrogen oxides by hydrocarbons on
heteropolyacid-metal complex catalysts

130:14330
Adduct of an organometal compound and a compatible anion and
supported polymerization catalyst component.
Jacobsen, Grant Berent; Wijkens, Peter; Jastrzebski, Johann T. B. H.;
Van Koten, Gerard (The Dow Chemical Company, USA). U.S. US
5834393 A 10 Nov 1998, 21 pp., Cont.-in-part of U.S. Ser. No.
402,437, abandoned. (English). (United States of America). CODEN:
USXXAM. CLASS: ICM: B01J031-00. ICS: B01J021-02;
C08F004-02; C08F004-60. NCL: 502152000. APPLICATION: US
1996-610647 4 Mar 1996. PRIORITY: US 1995-402437 10 Mar 1995.
DOCUMENT TYPE: Patent CA Section: 35 (Chemistry of Synthetic
High Polymers) Section cross-reference(s): 67
A supported catalyst component consists essentially of: (a)(1) a
support material, and (a)(2) an organometal or metalloid compd.
wherein the metal or metalloid is selected from the group consisting of
magnesium, zinc, boron, aluminum, germanium, tin, lead, and mixts.
thereof; and (b) an activator compd. comprising: (b)(1) a cation which is
capable of reacting with a transition metal metallocene compd. to form
a transition metal complex which is catalytically active for the polymn.
of a-olefins; and (b)(2) a compatible anion having up to 100
nonhydrogen atoms and contg. at least one substituent comprising a
moiety having an active hydrogen. In the mixt. of the support material,
the organometal compd., and the ionic activator compd., the
organometal compd. reacts with residual hydroxyl groups on the
support, forming a hydrocarbon byproduct and an organometal compd.
bound to the support, and the active hydrogen on the anion of the
activator reacts further with the bound organometal compd. to form a
further hydrocarbon byproduct. The order of addn. is immaterial as
long as these are the three essential ingredients added in the formation
of the support-bound activator complex.

Keywords

metallocene polymn catalyst supported cationic activator

Index Entries

Metallocene polymerization catalysts
Methyl aluminoxanes
adduct of an organometal compd. and a compatible anion and
supported polymn. catalyst component
18052-27-2
75-24-1
97-93-8, uses
7631-86-9, uses

135072-62-7
169104-71-6
183475-69-6
183475-55-0
25087-34-7
26221-73-8
67963-68-2
107539-52-6
183475-57-2
183475-59-4
183475-63-0
183475-66-3
106-41-2
554-68-7
1109-15-5
6911-87-1
17878-42-1
18162-48-6
adduct of an organometal compd. and a compatible anion and supported polymn. catalyst component

131:257588
Progress of study on homogeneous catalysis of organo-transition metallic complex.
Ding, Jianhua; Le, Zhanggao; Li, Jianqiang (Department of Applied Chemistry, East China Geological Inst., Linchuan 344000, Peop. Rep. China). Huagong Shikan, 13(3), 3-6, 25 (Chinese) 1999 Huagong Shikan Zazhishe. CODEN: HUSHFT. ISSN: 1002-154X.
DOCUMENT TYPE: Journal; General Review CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 67
A review with 28 refs. on progress of study on homogeneous catalysis of organo-transition metallic complex including solid supported homogeneous catalysis, water/org. diphasic catalytic system, supported aq. phase catalysis, and thermoregulated phase transfer catalysis.

Keywords

review homogeneous catalysis org metal complex
homogeneous catalysis organometallic transition metal complex review

Index Entries

Transition metal complexes
organometallic; progress of study on homogeneous catalysis of organo-transition metallic complex
Catalysis
Phase transfer catalysts
progress of study on homogeneous catalysis of organo-transition metallic complex
Organometallic compounds
transition metal; progress of study on homogeneous catalysis of organo-transition metallic complex

131:190216
Kinetics and mechanism of activation of O2 in the presence of metal complexes supported on a nitrogen-containing polymer matrix.
Zhubanov, K. A.; Emel'yanova, V. S.; Shakieva, T. V.; Babusenko, R. M. (NIInKHT, KazGNU im al'-Farabi, Almaty, Kazakhstan). Izv. Minist.

Nauki--Akad. Nauk Resp. Kaz., Ser. Khim., (4), 110-119 (Russian)
1998 Gylym. CODEN: IMKKFL. DOCUMENT TYPE: Journal CA
Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
The kinetics of activation of O2 in the presence of cobalt complexes supported on a nitrogen-contg. polymer matrix (polethylenimine, copolymer of monoethanolamine vinyl ether with N-vinylpyridine) and in the presence of sulfate ions was studied. A mechanism of the reaction is proposed from which a kinetic equation is obtained that describes the exptl. results. Solving the kinetic equation yielded the kinetic and thermodn. parameters which characterize the activity and the thermodn. stability that influences the reactions of the complexes.

Keywords

kinetics activation oxygen metal complex catalyst polymer matrix support

Index Entries

Oxidation catalysts
Oxidation kinetics
Polymers, reactions
kinetics and mechanism of activation of O2 in presence of metal complexes supported on a nitrogen-contg. polymer matrix
7439-96-5, uses
7440-02-0, uses
7440-48-4, uses
7440-50-8, uses
9002-98-6
14808-79-8, uses
240423-02-3
7757-83-7
7782-44-7, reactions
kinetics and mechanism of activation of O2 in presence of metal complexes supported on a nitrogen-contg. polymer matrix

131:78922
a-Alumina-Supported Nickel Catalysts Prepared with Nickel Acetylacetonate. 1. Adsorption in the Liquid Phase.
Molina, R.; Centeno, M. A.; Poncelet, G. (Unite de Catalyse et Chimie des Materiaux Divises, Universite Catholique de Louvain, Louvain-la-Neuve 1348, Belg.). J. Phys. Chem. B, 103(29), 6036-6046 (English) 1999 American Chemical Society. CODEN: JPCBFK. ISSN: 1089-5647. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 66, 73
Nickel acetylacetonate was used as a precursor for the prepn. of Ni/Al2O3 catalysts with metal content between 0.4 and 3 wt %. The nature of the interactions between the metal complex and the support has been investigated by X-ray photoelectron (XPS) and IR spectroscopies. The spectral features point to modifications of the precursor in the adsorbed state. IR results indicate that the interaction between acetylacetone and the support involves coordinately unsatd. (cus) Al3+ sites, hydroxyls of the support surface, and probably also basic oxygens. A model for these interactions is proposed. Monolayer coverage is achieved at a Ni loading of about 0.8-1.0%. Piling in multilayers occurs at higher content.

Keywords

alumina supported nickel catalyst nickel acetylacetonate adsorption

Index Entries

Adsorption
Catalysts
a-alumina-supported nickel catalysts prepd. with nickel acetylacetonate and adsorption in liq. phase
1344-28-1, uses
7440-02-0, uses
3264-82-2
a-alumina-supported nickel catalysts prepd. with nickel acetylacetonate and adsorption in liq. phase

130:169158
Syntheses and characterization of a chelating resin containing ONNO donor quadridentate Schiff base and its coordination complexes with copper(II), nickel(II), cobalt(II), iron(III), zinc(II), cadmium(II), molybdenum(VI) and uranium(VI).
Syamal, A.; Singh, M. M.; Kumar, D. (Department of Chemistry, Regional Engineering College, Haryana 136119, India). React. Funct. Polym., 39(1), 27-35 (English) 1999 Elsevier Science B.V. CODEN: RFPOF6. ISSN: 1381-5148. DOCUMENT TYPE: Journal CA Section: 38 (Plastics Fabrication and Uses)
A new mixed Schiff base N,N'-ethylenemono(3-carboxysalicylideneimine)mono(salicylideneimine) (I) was synthesized by the condensation of equimolar quantities of ethylenediamine, salicylaldehyde and 3-formylsalicylic acid. A polymer-supported Schiff base (PSCH2LH2) has been synthesized by the reaction of chloromethylated polystyrene (contg. 3.9 mmol of chlorine per g of resin and 2% crosslinked with divinylbenzene) and I. The polymer-anchored Schiff base reacts with metal salt/metal complex and forms polymer-anchored complexes having the formulas PSCH2LCu, PSCH2LNi, PSCH2LCo, PS-CH2LFeCl×DMF, PSCH2LZn, PSCH2LCd, PSCH2LMoO2 and PSCH2LUO2. The polymer-anchored complexes have been characterized on the basis of elemental anal., IR and electronic spectra and magnetic susceptibility measurements. The shifts of the n(C=N) (azomethine) stretch to lower energy and n(C=O) (carboxylic) to higher energy in the polymer-anchored complexes indicate the ONNO donor behavior of the chelating resin. The metal ions in the metal bound polymers can be leached by hot dil. formic acid, acetic acid or hydrochloric acid. The coordinated DMF is completely lost on heating the complexes in air. The complexes PSCH2LCu and PSCH2LCo are paramagnetic with a square planar structure, PSCH2LNi is diamagnetic with a square planar structure and PSCH2LFeCl×DMF is paramagnetic and octahedral, PSCH2LZn and PSCH2LCd are diamagnetic and tetrahedral, PSCH2LMoO2 and PSCH2LUO2 are diamagnetic and have an octahedral structure. The stoichiometry and the structure of the metal bound polymers are comparable with those of metal complexes of N,N'-ethylenebis(salicylideneimine). This is the first report of the syntheses of a mixed Schiff base and its coordination complexes.

Keywords

chelating resin quadridentate Schiff base
styrene polymer supported quadridentate Schiff base
metal complex quadridentate Schiff base

Index Entries

Chelating agents
syntheses and characterization of chelating resin contg. ONNO donor quadridentate Schiff base and its metal coordination complexes

220449-32-1
quadridentate Schiff base; for synthesis of chelating resin and its metal coordination complexes
90-02-8, reactions
107-15-3, reactions
610-04-8
reactant; in prepn. of quadridentate Schiff base for synthesis of chelating resin and its metal coordination complexes
7439-89-6, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
7439-98-7, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
7440-02-0, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
7440-43-9, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
7440-48-4, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
7440-50-8, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
7440-61-1, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
7440-66-6, complexes with styrene copolymer-anchored ONNO donor quadridentate Schiff base
9003-70-7, chloromethylated, reaction products with quadridentate Schiff base, metal complexes
220449-32-1, reaction products with chloromethylated styrene-divinylbenzene copolymer, metal complexes
59129-89-4
syntheses and characterization of chelating resin contg. ONNO donor quadridentate Schiff base and its metal coordination complexes

130:139107
Hydroformylation of styrene catalyzed by a rhodium thiolate binuclear catalyst supported on a cationic exchange resin.
Balue, J.; Bayon, J. C. (Departament de Quimica, Universitat Autonoma de Barcelona, Bellaterra, Barcelona 08193, Spain). J. Mol. Catal. A: Chem., 137(1-3), 193-203 (English) 1999 Elsevier Science B.V. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 29
The binuclear complex [Rh2(m-S(CH2)2NMe2)2(cod)2] (cod=1,5-cyclooctadiene) was anchored to a sulfonic exchange resin through its residual amine groups. The reaction of the immobilized complex with CO and PPh3 yielded the catalytically active complex [Rh2(m-S(CH2)2NHMe2)2(CO)2(PPh3)2]2+ supported in the polymer matrix. When methanol was used as solvent, the metal complex loaded onto a cation exchange resin (Amberlite IR-118H, sulfonic acid resin) behaved as a multifunctional catalyst, active in both the hydroformylation of styrene and the subsequent acetalization, directly rendering (MeO)2CHCHPhMe in 85% selectivity. E.g., styrene was reacted in MeOH with 2.5 mol% of polymer-bound [Rh2(m-SCH2CH2NHMe2+)2(CO)2(PPh3)2]2 and 5 mol% PPh3 under 8 bar pressure of 1:1 CO:H2 to give (MeO)2CHCHPhMe in 99% conversion and 88% selectivity over the regioisomer PhCH2CH2CH(OMe)2, with 0.68% Rh leached from the support. Furthermore, the immobilized catalyst can be sepd. from the reaction mixt. and recycled. A homogeneous model of the supported catalyst was generated by reacting polymer-bound [Rh2(m-S(CH2)2NMe2)2(cod)2] with TsOH, PPh3, and CO. Thus, the methanol sol. complex [Rh2(m-S(CH2)2NHMe+2)2(CO)2(PPh3)2](TsO-)2 was also found to be active in the hydroformylation of styrene yielding

identical regioselectivity to that of the immobilized catalyst, although the polymer-bound catalyst is much slower (20-fold) than the homogeneous catalyst, and catalyzes the formation of aldehydes rather than acetals.

Keywords

rhodium binuclear aminoethanethiolate complex homogeneous
polymer bound prepn
phenyldimethoxypropane prepn
hydroformylation acetalization styrene rhodium thiolate homogeneous
polymer bound catalyst
recyclable immobilized polymer bound styrene hydroformylation
acetalization catalyst

Index Entries

Hydroformylation
prepn. of rhodium thiolate complexes as polymer-bound and
homogeneous catalysts for the
hydroformylation/acetalization of styrene
Hydroformylation catalysts
supported; prepn. of rhodium thiolate complexes as
polymer-bound and homogeneous catalysts for the
hydroformylation/acetalization of styrene
67-56-1, reactions
100-42-5, reactions
93-53-8
104-53-0
90-87-9
30076-98-3
prepn. of dimethoxyphenylpropane by styrene
hydroformylation/acetalization with polymer-bound and
homogeneous rhodium thiolate complexes
220144-72-9
12148-72-0, Amberlite IR-118H bound (polystyrene-polysulfonic acid
bound)
220144-72-9, Amberlite IR-118H bound (polystyrene-polysulfonic acid
bound)
220144-74-1
220144-76-3, Amberlite IR-118H bound (polystyrene-polysulfonic acid
bound)
220144-77-4
220144-79-6, Amberlite IR-118H bound (polystyrene-polysulfonic acid
bound)
220144-80-9
12092-47-6
13242-44-9
220148-31-2
prepn. of rhodium thiolate complexes as polymer-bound and
homogeneous catalysts for the
hydroformylation/acetalization of styrene

130:68593
Preparation and properties of silica gel and silica with voids contg.
spatially organized organic functionalities.
Katz, Alexander; Davis, Mark E. (California Institute of Technology,
USA). PCT Int. Appl. WO 9856498 A1 17 Dec 1998, 69 pp.
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BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW,
HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ,
MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE,

DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: B01J013-00. ICS: B01J021-08; B01J023-755. APPLICATION: WO 1998-US12352 12 Jun 1998. PRIORITY: US 1997-49615 13 Jun 1997. DOCUMENT TYPE: Patent
CA Section: 48 (Unit Operations and Processes)

Porous silica gel and amorphous silica having voids contg. spatially organized org. functionalities were prepd. such that the org. functionalities were located in similar positions in each void and are homogeneously distributed. The org. functionalities are bound covalently to the available Si sites by a no. of functional groups and can contain a no. of functional groups themselves, including transition metal complexes, metal ions, etc. These functional groups can be positioned in a defined three-dimensional relationship within the voids and with respect to each other, possibly even to selectively position a chiral mol. imprinting structure within the void. By varying both the positions and identities of these functional groups, potentially diverse sets of substrate-specific adsorbents and non-biol.-based catalysts can be made.

Keywords

porous silica mol site imprinting
metal complex imprinting silica gel
chiral mol imprinting silica void

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Silica gel reaction products
with org. compds.; prepn. and properties of silica gel and silica with voids contg. spatially organized org. functionalities
218155-73-8, reaction products with silica
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7631-86-9, reaction products with org. compds.
prepn. and properties of silica gel and silica with voids contg. spatially organized org. functionalities
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7439-88-5, complexes
7439-89-6, complexes
7439-98-7, complexes
7440-06-4, complexes
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7440-18-8, complexes
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22541-63-5, complexes, reactions
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23713-49-7, complexes, reactions
silica-supported; prepn. and properties of silica gel and silica with voids contg. spatially organized org. functionalities
218155-75-0, reaction products with silica
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218155-74-9, reaction products with silica
two-point imprint structure, silica-supported; prepn. and properties of silica gel and silica with voids contg. spatially organized org. functionalities

131:280716
Column Preconcentration of Aluminum Using Eriochrome Cyanine R and Methyltrioctylammonium Chloride Adsorbent Supported on Naphthalene with Subsequent Spectrophotometric Determination.
Pourreza, N.; Behpour, M. (Department of Chemistry, Faculty of Sciences, Ahwaz, Iran). Microchem. J., 63(2), 250-256 (English) 1999 Academic Press. CODEN: MICJAN. ISSN: 0026-265X. DOCUMENT TYPE: Journal CA Section: 79 (Inorganic Analytical Chemistry)
A sensitive and rapid method for preconcn. of Al was developed by using naphthalene-methyltrioctylammonium chloride (Aliquat-336s) adsorbent. Al ion forms a complex with Eriochrome cyanine R that is retained by the adsorbent in the column at pH 6 with a flow rate of 1 mL min-1. The metal complex and naphthalene adsorbent are completely dissolved out of the column with 5 mL of a DMF and HOAc mixt. (2:1) and the absorbance is measured at 557 nm. The calibration graph is linear in the range 0.1-10 mg of Al in 5 mL of final DMF and HOAc mixt., and the detection limit is 0.01 mg ml-1. A relative std. deviation of 1.6% was obtained for eight replicate detns. of 5 mg of Al. The proposed method was applied to the detn. of Al in certified ref. material. (c) 1999 Academic Press.

Keywords

column preconcn aluminum detn spectrophotometric
Eriochrome cyanine R reagent aluminum detn spectrophotometric
methyltrioctylammonium naphthalene adsorbent aluminum preconcn

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Adsorbents
Liquid chromatography
Spectrophotometry
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7429-90-5, analysis
3564-18-9
91-20-3, analysis
5137-55-3
column preconcn. of aluminum using eriochrome cyanine R and methyltrioctylammonium chloride adsorbent supported on naphthalene with subsequent spectrophotometric detn.

131:228825
Cyclotrimerizations and oxo synthesis in supercritical water.
Borwieck, Henning (Inst. Technische Chem., Projekt Schadstoff-

Abfallarme Verfahren, Forschungszentrum Karlsruhe G.m.b.H., Karlsruhe D-76021, Germany). Wiss. Ber. - Forschungszent. Karlsruhe, FZKA 6302, 104 pp. (German) 1999. CODEN: WBFKF5. ISSN: 0947-8620. DOCUMENT TYPE: Report CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 22, 75

Supercrit. H2O (SCW), i.e. H2O >647.15 K and 22.05 MPa, possesses good solvent properties for cyclotrimerizations and oxo synthesis. By changing pressure and temp. in the supercrit. state, the dielec. const. of the fluid can be varied in the range of nonpolar and semi-polar solvents. Due to the excellent soly. of gases and liqs. in SCW, reactions of gaseous and liq. org. compds. can be carried out in supercrit. mixts. in 1 homogeneous phase. In studies concerning the stability of org. and organometallic compds. in SCW, phenylacetylene and tert-butylacetylene could be recovered in quant. yields after 2 h. CpCo(CO)2 was isolated for >90%, while CpCo(h4-H2C:CH-CH:CH2) (I) was totally decompd. after 2 h in SCW. In cyclotrimerizations, monosubstituted acetylenes were converted under CpCo catalysis in SCW and all formed org. and organometallic products were characterized. Under addn. of CpCo complexes, monosubstituted acetylenes reacted to form a mixt. of 1,2,4- and 1,3,5-substituted benzene derivs. Educts and products were stable towards hydrolysis and thermal decompn. Hence, CpCo(CO)2 and 8 different organometallic compds. could be analyzed by GC-MS in the reaction mixt. of the cyclotrimerization. Four different organometallic compds. were isolated and characterized by IR and 1H NMR spectroscopy. The structures were identified by single crystal x-ray diffractometry. The anal. of the org. and organometallic products found for the cyclotrimerization of acetylenes in SCW, led to a mechanism in SCW, which is similar to that in org. solvents and describes the formation of all products. I decompd. in SCW, but in presence of phenylacetylene it catalyzed the cyclotrimerization of monosubstituted acetylenes with formation of organometallic compds. The released butadiene reacted forming C8-, C12,- and C16-oligomers. By addn. of small amts. of CO in the reaction mixt., I reacted in SCW with CO to give CpCo(CO)2. In reactions with higher concns. of CO, decompn. of CpCo complexes was obsd. High concns. of CO supported the water gas shift reaction (WGSR). This reaction formed CO2 and H2. Cyclopentadiene, formed during the decompn. of CpCo complexes, reacted under these conditions by oxo synthesis and hydrogenation to form cyclopentylmethanal. Under these conditions, CpCo(CO)2 was not stable in SCW. The synthesis of cyclopentylmethanal showed the possibility to convert unsatd. substrates with CO and H2 in SCW. This observation led to the idea to perform oxo synthesis in SCW. Co2(CO)8, [Co(CO)3PPh3]2, and Rh6(CO)16 was used as precatalyst. Cyclohexene and 1-hexene reacted with CO and H2 during 30 min with yields of >55% to produce C7-aldehydes. Hydrogenation of aldehydes to alc. and the water gas shift reaction were obsd., and also hydrogenation and isomerization of the unsatd. substrates occurred. Due to the WGSR, oxo synthesis in SCW could be carried out without addn. of H2 to the reaction mixt., because it was formed in situ. Oxo synthesis of cyclohexene led to 1 C7-aldehyde and C7-alc. 1-Hexene reacted to give 3 different aldehydes and alcs. The chemoselectivity could be influenced by the amt. and the concn. of H2 and CO in the mixt. The regioselectivity depended on the structure of the metal complex. Substitution of carbonyl ligands by phosphine ligands in the complex led to better n/iso-selectivities. In oxo synthesis with Co carbonyls as precatalyst, extension of reaction time has no effect on the product distribution, due to the lability of the catalyst in SCW. The catalyst was decompd. Rh6(CO)16 was much more stable in oxo synthesis. After 2 h, >70% of the metal complex could be recovered.

Keywords

cyclotrimerization monosubstituted alkyne supercrit water

dicarbonylcyclopentadienylcobalt catalyst
hydroformylation alkene supercrit water metallocarbonyl catalyst

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131:101884
New approaches to development of transition metal catalysts by solid-phase synthesis.
Uozumi, Yasuhiro; Danjo, Hiroshi (Fac. Pharm., Nagoya City Univ., Japan). Farumashia, 35(7), 711-715 (Japanese) 1999 Pharmaceutical Society of Japan. CODEN: FARUAW. ISSN: 0014-8601.
DOCUMENT TYPE: Journal; General Review CA Section: 21 (General

Organic Chemistry) Section cross-reference(s): 29, 67
A review with 16 refs. on phosphine-transition metal complex catalysts supported on polymers and application of solid-phase synthesis to development of the catalysts.

Keywords

review transition metal catalyst polymer supported
solid phase synthesis transition metal catalyst review

Index Entries

Solid phase synthesis
development of transition metal catalysts by solid-phase synthesis
Transition metal phosphine complexes
supported on polymers; development of transition metal catalysts by solid-phase synthesis

130:245865
Luminescence sensors with polymer-immobilized reagents with singlet oxygen quenching.
Hartmann, Paul; Leiner, Marco Jean Pierre (AVL Medical Instruments, Switz.). Eur. Pat. Appl. EP 907074 A2 7 Apr 1999, 13 pp.
DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (German). (European Patent Organization). CODEN: EPXXDW. CLASS: ICM: G01N021-64. APPLICATION: EP 1998-890284 2 Oct 1998.
PRIORITY: AT 1997-1678 3 Oct 1997. DOCUMENT TYPE: Patent CA Section: 79 (Inorganic Analytical Chemistry) Section cross-reference(s): 74
Optical sensors consist of a matrix for immobilization of reagents, a luminescence indicator that can quench oxygen and an agent that can quench (i.e., deactivate) singlet oxygen in order to stabilize the sensor. Quenching of singlet oxygen is carried out using a light stabilizer chosen from a tertiary amine, a hindered amine, or a transition metal complex (e.g., a dialkyldithiocarbamate, dialkyl dithiophosphate, or a Schiff base). Preferably, the luminescence indicator is bound covalently to the matrix (e.g., an org. polymer) by 3-20 methylene (CH2) groups. The sensor is esp. useful as an oxygen sensor.

Keywords

oxygen sensor luminescence singlet oxygen quenching
light stabilizer singlet oxygen quenching luminescence
hindered amine light stabilizer oxygen sensor
transition metal complex oxygen sensor

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bromides, complexes, light stabilizers; luminescence sensors with polymer-immobilized reagents with singlet oxygen quenching
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complexes, light stabilizers; luminescence sensors with polymer-immobilized reagents with singlet oxygen quenching
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Transition metal thiocarbamic acid complexes
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luminescence sensors with polymer-immobilized reagents
with singlet oxygen quenching
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7782-44-7, analysis
sensors; luminescence sensors with polymer-immobilized reagents with singlet oxygen quenching

131:333245
Interactions of Al(acac)3 with cell membranes and model phospholipid bilayers.
Suwalsky, Mario; Ungerer, Brigitte; Villena, Fernando; Norris, Beryl; Cardenas, Hernan; Zatta, Paolo (Faculty of Chemical Sciences, University of Concepcion, Concepcion 160-C, Chile). J. Inorg. Biochem., 75(4), 263-268 (English) 1999 Elsevier Science Inc. CODEN: JIBIDJ. ISSN: 0162-0134. DOCUMENT TYPE: Journal CA Section: 4 (Toxicology)
Aluminum is a neurotoxic agent; however, little information has been obtained regarding its mol. cytotoxicity and the effects on the stability of biol. membranes. This is mainly due to the ill-defined chem. speciation of the metal compds. For this reason, the present study used aluminum acetylacetonate, (Al(acac)3), a neutral, chem. well-defined, hydrolytically stable and lipophilic compd. To understand the mol. mechanism of its interaction with cell membranes, Al(acac)3 was incubated with human erythrocytes, isolated toad skin and mol. models of biomembranes. The latter consisted of multilayers of dimyristoylphosphatidylcholine (DMPC) and dimyristoyphosphatidylethanolamine (DMPE), representative of phospholipid classes located in the outer and inner monolayers of the human erythrocyte membrane, resp. The results showed that Al(acac)3 interacted with the erythrocyte membrane modifying its normal discoid morphol. to both echinocytic and stomatocytic shapes. This finding indicates that the Al complex was inserted in both the outer and inner layers of the red cell membrane, a conclusion supported by x-ray diffraction analyses of DMPC and DMPE bilayers. Electrophysiol. measurements performed on toad skin revealed a significant decrease in the p.d. and short-circuit current responses after application of Al(acac)3, effects interpreted to reflect inhibition of the active transport of ions. Al(acac)3 was active on both surfaces of the skin suggesting that the membrane was permeated by

the metal complex. It is concluded that Al(acac)3 both alters the mol. structure of the lipid bilayer, thereby modifying the biophys. properties of the cell membrane, and changes its physiol. properties.

Keywords

aluminum acetylacetonate plasma membrane phospholipid bilayer

Index Entries

Membrane, biological
bilayer; interactions of aluminum acetylacetonate with cell membranes of humans and other animals and model phospholipid bilayers
Erythrocyte
cell membrane; interactions of aluminum acetylacetonate with cell membranes of humans and other animals and model phospholipid bilayers
Cell membrane
erythrocyte; interactions of aluminum acetylacetonate with cell membranes of humans and other animals and model phospholipid bilayers
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7429-90-5, biological studies
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18656-38-7
20255-95-2
membrane contg.; interactions of aluminum acetylacetonate with cell membranes of humans and other animals and model phospholipid bilayers

131:58965
Silsesquioxanes as models of silica supported catalyst. I. [3-(diphenylphosphino)propyl]heptapropyloctasilsesquioxane and (3-mercaptopropyl)heptapropyloctasilsesquioxane as ligands for transition metal ions.
Hendan, Benedikt J.; Marsmann, Heinrich C.
(Universitat-Gesamthochschule Paderborn, Fachbereich Chemie und Chemietechnik, Paderborn D-33098, Germany). Appl. Organomet. Chem., 13(4), 287-294 (English) 1999 John Wiley & Sons Ltd.
CODEN: AOCHEX. ISSN: 0268-2605. DOCUMENT TYPE: Journal
CA Section: 29 (Organometallic and Organometalloidal Compounds)
The ligand [3-(diphenylphosphino)propyl]heptapropyloctasilsesquioxane (dpps) can be prepd. by reacting (3-chloropropyl)heptapropyloctasilsesquioxane (cs) with KP(Ph)2. The transition metal complexes [Rh(CO)(dpps)2Cl], [Rh(COD)(dpps)Cl] and [Pt(dpps)2Cl2] were synthesized as models of functionalized SiO2-gel surfaces. Without destruction of the siloxane cage, the intermediate compds. Hg(ss)2, and Pb(ss)2 were obtained from [3-mercaptopropyl]heptapropyloctasilsesquioxane (ssH). Starting from Pb(ss)2, the transition-metal complexes [Au(ss)PPh3], [Rh(ss)(CO)2]2 and [Rh(ss)(COD)]2 are accessible. The compds. were characterized mostly by 1H, 13C, 29Si and 31P NMR spectroscopy.

Keywords

silsesquioxane phosphinopropyl prepn substitution reaction transition metal complex
siloxane cage complex transition metal phosphinopropyl silsesquioxane prepn

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prepn. of

131:44800
Calix[4]arene dibenzocrown ethers as cesium selective extractants.
Kim, Jong Seung; Pang, Jin Hyun; Yu, Ill Yong; Lee, Won Ku; Suh, Il Hwan; Kim, Jong Kuk; Cho, Moon Hwan; Kim, Eun Tae; Ra, Do Young (Department of Chemistry, Konyang University, Nonsan 320-711, S. Korea). J. Chem. Soc., Perkin Trans. 2, (4), 837-846 (English) 1999 Royal Society of Chemistry. CODEN: JCPKBH. ISSN: 0300-9580. DOCUMENT TYPE: Journal CA Section: 28 (Heterocyclic Compounds (More Than One Hetero Atom)) Section cross-reference(s): 79

1,3-Dialkoxycalix[4]arene dibenzocrown ethers were synthesized in the fixed 1,3-alternate conformation with good yields by reaction of 1,3-dialkoxycalix[4]arenes with dibenzodimesylates (I; R = H, Bu; n = 0, 1, 2) in the presence of cesium carbonate. The three dimensional 1,3-alternate conformation was confirmed by x-ray anal. Upon two phase extn., NMR studies on the ligand-metal complex, single ion and competitive ion transport expts. through a bulk liq. membrane, 1,3-dipropoxycalix[4]arene dibenzocrown-6, in which two benzo groups are sym. attached to the crown-6 linkage, gave one of the most efficient and selective extractabilities for cesium ion over other alkali metal ions. From supported liq. membrane expts. using two of the 1,3-dialkoxycalix[4]arene dibenzocrown ethers as org. carriers,

permeation coeffs. of the cesium ion were estd. to be 0.42 and 0.27 cm h-1. The selectivity of cesium over sodium ion was obsd. to increase with permeation time.

Keywords

calixarene dibenzocrown ether prepn cesium extn

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227468-20-4
calix[4]arene dibenzocrown ethers as cesium selective extractants

130:252793
Nitrogen-containing transition metal polymerization catalysts for olefins.
Britovsek, George Johan Peter; Dorer, Birgit Angelika; Gibson, Vernon

Charles; Kimberley, Brian Stephen; Solan, Gregory Adam (BP Chemicals Limited, UK). PCT Int. Appl. WO 9912981 A1 18 Mar 1999, 78 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). (World Intellectual Property Organization). CODEN: PIXXD2. CLASS: ICM: C08F004-70. ICS: C07D213-53; C07F015-02; C07F015-06; C08F010-00.
APPLICATION: WO 1998-GB2638 2 Sep 1998. PRIORITY: GB 1997-18775 5 Sep 1997; GB 1997-22104 21 Oct 1997; GB 1998-5336 12 Mar 1998; GB 1998-6106 20 Mar 1998; GB 1998-6661 27 Mar 1998; GB 1998-9598 7 May 1998. DOCUMENT TYPE: Patent
CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67, 78

The title N-contg. transition metal compds. are based on metals M of Fe[II], Fe[III], Ru[II], Ru[III] or Ru[IV] of I (X = group covalently or ionically bonded to the transition metal M; T = the oxidn. state of the transition metal M and b = valency of the atom or group X; R1-4 and R6 are = H, halogen, hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl or substituted heterohydrocarbyl; R5, R7 = H, halogen, hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl or substituted heterohydrocarbyl), optionally supported, and a co-catalyst. Intermediate A [2,6-diacetylpyridinebis(2,6-diisopropylanil)] was prepd. by the reaction of 2,6-diacetylpyridine and 2,6-diisopropylaniline, then reacted with ferrous chloride in butanol to provide an example catalyst. Co-catalyst methylaluminoxane (400 mequiv)was used with the above iron catalyst complex (0.05 mmol) in the polymn. of C2H4 to give 0.78 g polyethylene and catalyst activity 480 g/mmol-h-bar.

Keywords

iron transition metal complex polymn catalyst olefin
organoaluminum cocatalyst polymn olefin
diacetylpyridine diisopropylanil iron chloride catalyst
polyethylene manuf iron complex catalyst

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scavenger; manuf. of nitrogen-contg. transition metal polymn. catalysts for olefins

130:158908
Catalysis of the oxidation of hydrogen by a platinum-acetylacetone complex anchored on silica.

Oleksenko, L. P.; Belyakova, L. A.; Yatsimirskii, V. K.; Boldyreva, O. Yu.; Lyashenko, D. Yu. (Taras Shevchenko Kiev University, Kiev 252033, Ukraine). Theor. Exp. Chem., 34(3), 153-157 (English) 1998 Consultants Bureau. CODEN: TEXCAK. ISSN: 0040-5760.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
By binding platinum ions with acetylacetone immobilized on a silica surface, we have obtained a metal complex catalyst contg. Pt(II). We have also studied its catalytic activity in the model reaction of oxidn. of hydrogen. We have shown that over the course of the catalytic process, this catalyst exhibits high catalytic activity at room temps. and displays the "surface memory" effect with respect to a previous reaction. The activity of the grafted Pt complex is significantly higher than the activity of a supported platinum catalyst.

Keywords

oxidn hydrogen platinum acetylacetonate silica catalyst

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130:9962
New tetraaza macrocyclic complexes of palladium(II) and platinum(II) formed by the self-condensation of 5-amino-3-methyl-1-phenylpyrazole-4-carbaldehyde in the presence of metal ions. a-Amino ether and carbinolamine derivatives of the macrocyclic Schiff base metal complex.
Ramadan, Abd El-Mottaleb M.; El-Emary, Talaat I. (Chemistry Department, Faculty of Education, Tanta University, Kafr-El-Sheikh, Egypt). Transition Met. Chem. (London), 23(4), 491-495 (English) 1998 Chapman & Hall. CODEN: TMCHDN. ISSN: 0340-4285.
DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions)
The self-condensation of 5-amino-3-methyl-1-phenylpyrazole-4-carbaldehyde (AMPC) in the presence of PdII and PtII ions yields [M(TAAP)]Cl2, (M = Pt, Pd; TAAP = the fully cyclized tetradentate macrocyclic ligand tetrapyrazolo[1,5,9,13]tetraazacyclohexadecine). Metathetical displacement of the chloride led to isolation of [M(TAAP)]X2, (X = I, ClO4 and BF4), the formulation of which is supported by elemental anal., molar conductance and magnetic susceptibility measurements, and IR and UV-visible spectra. Spectroscopic and other anal. results reveal that the complexes have square-planar stereochem. with four donor N atoms coordinated to the metal ion in a planar array. The reaction which produces this new cyclic ligand is assumed to include the metal ion acting as a template for the condensation. The probable mechanistic implications for the coordination template hypothesis are discussed to explain the formation of these new macrocyclic chelate compds. Both PdII and PtII complexes appear to be sensitive to nucleophilic attack at the methine C, which is reversible upon acidification. The reaction of [Pt(TAAP)]2+ or [Pd(TAAP)]2+ with MeO- or EtO- ions gave partially solvolyzed inner complexes contg. two ionized a-amino ether functions, stabilized by the macrocyclic chelate ring. Attempts to prep. discrete a-carbinolamine derivs. were

unsuccessful.

Keywords

group 10 tetrapyrazolotetraazacyclohexadecine Schiff macrocycle prepn
aminopyrazolealdehyde template cyclocondensation Schiff macrocycle prepn
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tetrapyrazolotetraazacyclohexadecine
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